

Gile, Eleanor

Thesis 1949

The development of an inventory test on library information and a related unit of instruction.

BOSTON UNIVERSITY  
SCHOOL OF EDUCATION

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BOSTON UNIVERSITY  
SCHOOL OF EDUCATION

Thesis

THE DEVELOPMENT OF AN INVENTORY TEST  
ON LIBRARY INFORMATION AND A RELATED UNIT OF INSTRUCTION

Submitted by

Eleanor Gile  
(B.A., Bates College, 1929)

In partial fulfillment of requirements for  
the degree of Master of Education

1949

✓  
Boston University  
School of Education  
Library

Gift of  
Eleanor Gile  
School of Education  
August 1949  
31266



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The writer wishes to express sincere appreciation to Dr. Walter N. Durost of Boston University for helping her to develop An Inventory Test on Library Information and for his friendly guidance throughout the writing of this thesis.



## CHAPTER I

### INTRODUCTION

#### THE PROBLEM

Statement of the problem. The purpose of this study was (1) to formulate valid objectives on the use of library information, (2) to set up a teaching unit on the basis of these objectives, and (3) to construct an instrument, also based upon these objectives, that would measure the ability of students to learn and to use such information.

Justification of the problem. The problem originated from a study of the results of the Iowa Tests of Educational Development, administered to Grades 10 and 11 of Scituate High School in the fall of 1946. Although the percentile ranks were high in all other tests reflecting the work of the English department, the pupils did very poorly in Test 9, "Use of Sources of Information."

In a follow-up study of language texts used in the various classes, it was found that some lessons were included that would make the pupils efficient in the use of the library and its facilities, but insufficient information and drill were provided. Thus started a search for additional material needed in the construction of a unit on library information.

Further research revealed a current need of good instruction in the use of the library in spite of the fact that many school systems have already included some library science in their curriculums. As Walraven and Hall-Quest state in their Library Guide for Teachers: "Pupils need instruction

*[Faint, illegible handwriting throughout the page, possibly bleed-through from the reverse side.]*



in and guidance in the economic use of books."<sup>1/</sup> From all directions this need is indicated. Classroom teachers complain of the inability of pupils to find information outside of their own texts, public librarians tell of time spent helping high school students do reference work, college professors find many in their classes with inadequate knowledge to do research work efficiently.

Educators, for yet another reason, are stressing more and more the importance of the library in the school system. Different methods of pedagogy - the unit method, the project method, the laboratory method, as well as the integrated programs of today - all point to the need of teaching more about the use of the library in the secondary school. The Library Manual for the Virginia Public Schools says:

Instruction in library usage and regulations and how to locate a desired book or bit of information is essential in any school, for the ability to do independent research and to evaluate and interpret one's findings is the keystone on which modern methods of teaching are based.<sup>2/</sup>

It, therefore, appeared justifiable to construct a unit on the use of the library, a unit that might serve as a concentrated course early in high school or as a review for more advanced pupils.

The lack of good library tests on the secondary school level has made the construction of the test more warranted, if possible, than the composition of the teaching unit although one is certainly not independent of the

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<sup>1/</sup> Walraven, Margaret Kessler and Hall-Quest, Alfred L., Library Guide for Teachers (New York: John Wiley and Sons, Inc., 1941), p.vi.

<sup>2/</sup> Library Manual for Virginia Public Schools (Bulletin State Board of Education, No. 2, Vol. XX, August, 1937), p. 50.



other. In this case, both the unit and the test were based upon the same objectives which were set up after extensive research was completed.

Analysis of the problem. In order to determine essential objectives for a unit and a test, it was necessary to investigate the material available in the field of library science, particularly that on the secondary school level. And so these questions arose:

1. What texts have been written on this subject?
2. What do authorities on the library consider necessary to the student?
3. What do workbooks on library instruction stress?
4. How do current English language texts introduce this subject?
5. What are other schools doing by way of library instruction?
6. What are the needs of instruction in the writer's own school?

Secondly, the unit needed to be carefully planned to insure optimum results. It was necessary, for example, to decide approximately the total number of hours to be spent on instruction and the amount of time to be devoted to each objective according to its value in answering the need of the pupil. It was also important to motivate the work as highly as possible in order to hold the interest of the student and to encourage his best effort.

A third part of this problem was the construction of a test that would measure the material compiled in the objectives. Immediate attention had to be given to the format of the instrument. Should it be a test with as many subtests as objectives? Or was it advisable to group the items under fewer headings but under ones related generally to the same aims? One had to determine, as well, the number of items that could be answered in an

The first part of the report deals with the general situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The second part of the report deals with the financial situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The third part of the report deals with the administrative situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The fourth part of the report deals with the educational situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The fifth part of the report deals with the health situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The sixth part of the report deals with the social situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The seventh part of the report deals with the economic situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The eighth part of the report deals with the political situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The ninth part of the report deals with the cultural situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The tenth part of the report deals with the religious situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.



average class period of forty minutes and cover adequately the material to be tested. The form of the item, also a criterion of a good test, and depending to a certain extent upon the nature of the subject in question, had to be determined. All of these decisions had to be made in order to produce a valid and reliable instrument.

Scope and delimitations. Upon completion of the unit and the test, it was decided to introduce this study in the ninth year since most authorities agree that such instruction should be given as early as possible in high school.

Accordingly, the experiment was carried on in the ninth grade of several communities during the spring of 1949. A total of 416 ninth grade students were given the test, entitled An Inventory Test on Library Information, as a pre-test. This initial testing was followed immediately by a unit of approximately sixteen lessons on the use of the library. An Inventory Test on Library Information was then re-administered so as to obtain a final estimate of the pupils' comprehension of library information after formal instruction. In order to be sure the experimental group was a representative high school group with relation to mental ability and to make possible the calculation of the correlation between ability to learn and actual learning, the Terman-McNemar Test of Mental Ability was also included as a part of the testing program in each school.

#### DEFINITION OF TERMS

Inventory test. South<sup>1/</sup> defines an inventory test as "one used to

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<sup>1/</sup> South, Earl Bennett, A Dictionary of Terms Used in Measurements and Guidance (New York: The Psychological Corporation, 1939), pp. 44-45.





determine the ability and knowledge of pupils in a certain field of subject matter at the beginning of a period of instruction." He further states that "an inventory test, therefore, usually covers a particular field of subject matter rather thoroughly."

Library information. Library information is to be considered here apart from library skills although the two are so closely connected as to defy too definite a separation. As a matter of fact, in the unit itself are references to skills because it seemed impractical to omit such a necessary feature of library usage. In the test, however, knowledge of library information alone is stressed since the author found it feasible to concentrate on only one phase of a broad field of instruction.

Briefly, by library information is meant (1) the use of books as tools of learning, (2) a familiarity with the organization of the library, (3) the use of reference books of all kinds, (4) the importance of periodicals in research, (5) the use of different reading techniques, (6) the construction of the bibliography, and (7) the ability to take accurate notes and to make good outlines.

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## CHAPTER II

### HISTORY OF THE PROBLEM

It has been difficult to find much material on the history of actual library instruction and even harder to trace the development of testing in this field. The following is an attempt to present as accurate a picture as possible of the growth of the need for library information in the school, with considerable emphasis upon legitimate objectives, and of the genesis of the library usage test.

### LIBRARY INSTRUCTION

Origin of library instruction. It wasn't until Melvil Dewey became state librarian of New York in 1888, that we hear of library science in this country. The library movement, itself, was already well underway by this time, first nurtured by educators in district schools and later fostered by public libraries. Although there must have been some manner of organizing books in the early libraries, there is no mention of any outstanding plan until Dewey created his now famous Decimal System.

It is not surprising, however, that library science should originate as it did since the first step was to introduce books into the schools for intelligent reading and appreciation. The middle nineteenth century saw the appearance of readers such as The William McGuffey Readers, the Tower Readers, the Russell Readers. This new movement in reading superseded the old ABC plan and was due principally to the efforts of educators like Horace Mann of Massachusetts. By 1880, teachers were endeavoring to

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develop in their pupils a permanent interest in literature. A second influence, known as the Herbartian movement, brought still more books into the school -- historical as well as literary ones -- for the creator, Johann Herbart, German philosopher and educator, believed in teaching character through historical and literary stories. Thus the school library grew in size and in importance.

The first paper known to be written definitely on the library appeared in 1887 at the annual meeting of the National Educational Association in Chicago. Thomas J. Morgan, principal of State Normal School in Providence, Rhode Island, presented his views on how to teach the use of books, indexes, references, etc. Here, then, is a definite clue to library instruction in its infancy.

Influence of later methods of teaching. Education in the twentieth century, with its emphasis upon the individual, has automatically made the library the center of attention in the school. Reading plays an important role in introducing the child to realities of life which the traditional instruction of the past tended to shun. John Dewey was the father of this scientific movement to treat the individual in school as a young citizen who should so learn to conduct himself there that he would continue to be a good citizen after leaving school. Many other educators followed Dewey and helped to broaden this new concept of education.

It is understandable that, if the person is to progress individually, he must be directed to work on his own initiative a greater part of the time. Many new methods call for directed study or research. The project method, the contract method, any of the so-called laboratory courses demand the use of the library; so library instruction becomes an inevitable



The first thing I noticed when I stepped out of the car was the cold. It was a sharp contrast to the warm blanket of the car's interior. I shivered slightly, pulling my coat tighter around me. The air was crisp and clear, a welcome change from the smoggy city I had just left. I took a deep breath, savoring the fresh scent of the morning. The sun was just beginning to rise, casting a soft, golden glow over the landscape. The trees were bare, their branches reaching out like skeletal fingers against the pale sky. A gentle breeze rustled the leaves of the few trees that still held onto their autumn foliage. I walked along a path that was mostly clear of leaves, the occasional crunch of a dry leaf underfoot reminding me of the season. In the distance, a small town was visible, its houses and streets nestled in a valley. The overall atmosphere was one of quiet solitude and the promise of a new day.

(1)



need at this point, for books without instruction as to their use are of little value to the student. Courses on the use of the library, therefore, began to appear in school curriculums by the 1930's.

Pioneer schools in library instruction. Several schools in New York state have been teaching library information for a number of years. In Detroit Central High School, at Newark, New Jersey, in the Cleveland high schools, and in the Virginia public schools there are well worked-out plans for such instruction. Each school system has some type of manual or outline for this purpose.

Let us examine briefly the Library Manual for Virginia Public Schools for an illustration of the history of library instruction in one state. School libraries were included in the first provision for public education in Virginia in the year 1870. The growth of these libraries followed the course of development marked by changing methods of education throughout the country until the educators of that state saw the necessity of introducing library instruction into the school systems. By 1932, the Virginia Curriculum Revision Program was stressing the importance of the library in view of the focus of attention upon the individual child, and because of the wider use of extra reading beyond the textbook requirements.

The primary purpose of the manual is to emphasize the training of pupils to use library books and materials efficiently. Printed in 1937, it provides definitely for library instruction in the schools of Virginia.

Each pupil shall receive a course of instruction in the use of the library as soon as practicable after his first enrollment in high school. Twelve lessons may be offered as a separate short course or may be made a part of the regular courses. 1/

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1/ Library Manual for Virginia Public Schools (Bulletin State Board of Education, No. 2, Vol. XX, August, 1937), p.15



The following broad objectives<sup>1/</sup> give one an idea of the extensive program prescribed:

- I. Introduction to the Library and Citizenship in the Library.
- II. The Book: Its Evaluation and Use.
- III. The Classification of Books in the Library.
- IV. The Card Catalog.
- V. The Use of the Dictionary in the Library.
- VI. The Use of Encyclopedias and Their Yearbooks.
- VII. The Use of Periodicals and Periodical Indexes in the Library.
- VIII. The Use of General Reference Books in the Library.
- IX. Book Resources Outside the School Library.
- X. Note-Taking and Bibliography-Making in the Library.
- XI. Books as Friends.
- XII. Special Reference Books Connected with Subject or Unit.

Common objectives of library instruction. As one examines the numerous publications that now feature the use of the library, he notes the similarity of the objectives underlying each.

A good idea of the general aims of library instruction may be had from the following list:<sup>2/</sup>

To create an interest in the school library and an appreciation of it as a laboratory for exploration and research.

To help students acquire correct study techniques, such as skill in the use of books and other reference aids, and the ability to evaluate material and summarize it in notes.

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<sup>1/</sup> Ibid., pp. 54-84.

<sup>2/</sup> Ingles, May and McCague, Anna, Teaching the Use of Books and Libraries (New York: The H.W. Wilson Company, 1944), p.11.





To help integrate the curriculum by leading students to investigate various fields of content and to gather material from many sources.

To help develop the reading habit and an appreciation of the best in literature.

To provide opportunity for the practice of citizenship and the acquiring of desirable attitudes and habits in regard to books and libraries.

Although each textbook, manual, or course outline must necessarily set up its own specific objectives, there appears to be a close agreement among authorities in this field. It is interesting to follow through with those of Ingles and McCague<sup>1/</sup> especially since they are based on the work of Zaidee Brown<sup>2/</sup>, author of a well-known guide to library instruction.

#### I. The Library and Its Arrangement

1. To interest students in the school library by suggesting the possibilities for pleasure and profit in the use of it.
2. To acquaint them with the arrangement and rules of the library and to make clear the meaning of good library citizenship.
3. To teach them the general plan of the decimal classification and the arrangement of books on the library shelves.

#### II. The Book

1. To teach students the proper care of books.
2. To teach them to use books skilfully, by acquainting them with the various parts of the book and the purpose of each.

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<sup>1/</sup> Ibid., pp. 21, 35, 47, 65, 83, 95, 119, 135, 149, 163.

<sup>2/</sup> Brown, Zaidee, The Library Key (New York: The H.W. Wilson Company, 1944).



# THE HISTORY OF THE UNITED STATES

OF THE UNITED STATES OF AMERICA

FROM THE FIRST SETTLEMENTS TO THE PRESENT TIME

BY JAMES M. SMITH

OF THE UNIVERSITY OF CHICAGO

IN TWO VOLUMES

VOLUME I

THE FIRST SETTLEMENTS TO THE PRESENT TIME

THE FIRST SETTLEMENTS TO THE PRESENT TIME

THE FIRST SETTLEMENTS TO THE PRESENT TIME

THE FIRST SETTLEMENTS TO THE PRESENT TIME

THE FIRST SETTLEMENTS TO THE PRESENT TIME

THE FIRST SETTLEMENTS TO THE PRESENT TIME

### III. The Card Catalog

1. To show students that the card catalog is an index or directory to the library.
2. To teach them to use the catalog skillfully.

### IV. The Dictionary

1. To familiarize students with the arrangement and contents of dictionaries, especially Webster's NEW INTERNATIONAL and the NEW STANDARD dictionaries.
2. To help them acquire skill in the use of these unabridged dictionaries.
3. To encourage the habit of using the dictionary as a reference aid.

### V. Encyclopedias

1. To teach students use of the encyclopedia as a reference aid.
2. To acquaint them with some of the most important encyclopedias.

### VI. Reference Books

1. To acquaint students with the names and outstanding characteristics of some of the most useful reference books.
2. To give them some idea of the broad scope of the field of reference books and their value in connection with different subjects.
3. To give them practice in locating and using some of these books so that they may acquire skill and resourcefulness in finding various kinds of information.

### VII. Magazines and Magazine Indexes

1. To acquaint students with some of the best magazines and to show their value for reference use and for recreational reading.
2. To explain the use of periodical indexes, especially the Readers' Guide.

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ . It is shown that the system (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition  $\alpha + \beta = 1$  is satisfied. This condition is also necessary for the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ .

2. In the second part of the paper, the problem of the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$  is solved. It is shown that the system (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition  $\alpha + \beta = 1$  is satisfied. This condition is also necessary for the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ .

3. In the third part of the paper, the problem of the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$  is solved. It is shown that the system (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition  $\alpha + \beta = 1$  is satisfied. This condition is also necessary for the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ .

4. In the fourth part of the paper, the problem of the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$  is solved. It is shown that the system (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition  $\alpha + \beta = 1$  is satisfied. This condition is also necessary for the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ .

5. In the fifth part of the paper, the problem of the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$  is solved. It is shown that the system (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition  $\alpha + \beta = 1$  is satisfied. This condition is also necessary for the existence of solutions of the system (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ .

3. To arrange enough practice work in the use of periodical indexes to enable students to acquire some skill in using them.

#### VIII. Using Booklists and Building One's Own Library

1. To stimulate an interest in books that will lead to a desire to own them.
2. To give students some standards for evaluating books both for content and for physical make-up.
3. To acquaint them with the most important aids for the selection and buying of books.
4. To show them how they may continue to use library facilities after leaving school.

#### IX. Compiling Bibliographies

1. To review the sources of information previously studied.
2. To teach students to record in correct form, references to material found in these sources.

#### X. Note Taking

1. To teach students the main points to observe in taking effective notes.
2. To provide opportunity for practice in taking notes on suitable material, so that skill may be acquired.

Concepts of library instruction. Library instruction is now recognized as a necessary part of a student's high school education; its objectives are well established; but there is much disagreement as to the manner of its presentation. Some educators would have the school librarian be responsible for giving the instruction; others would have the classroom teacher present the material. There is also the possibility of having the teacher and the librarian cooperate.

Nor are authorities in concordance as to the type of instruction to be given. There are those who favor the unit method, particularly if the

1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part, we consider the case of a single particle.

3. The third part is devoted to the case of a system of particles.

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7. The seventh part is devoted to the case of a system of continuous media.

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32. In the thirty-second part, we consider the case of a single continuous medium.

33. The thirty-third part is devoted to the case of a system of continuous media.

34. In the thirty-fourth part, we consider the case of a single continuous medium.

35. The thirty-fifth part is devoted to the case of a system of continuous media.

36. In the thirty-sixth part, we consider the case of a single continuous medium.

37. The thirty-seventh part is devoted to the case of a system of continuous media.

38. In the thirty-eighth part, we consider the case of a single continuous medium.

39. The thirty-ninth part is devoted to the case of a system of continuous media.

40. In the fortieth part, we consider the case of a single continuous medium.



student has need of instruction at the beginning of his high school career. Many, however, frown upon this method as an artificial situation and propose instruction be given as it is needed in the various classes of the student.

A practical answer to the confusion caused by these varying points of view probably is that the individual school should decide which method will best fit its needs and its curriculum.

There is a growing tendency to integrate library instruction with the curriculum, but as yet complete integration, for most schools, is only an ideal. Until educators' opinions can be changed, curriculums revised, and the teachers trained more extensively on the use of the library, there will remain the problem as to the best place for the instruction according to the individual school situation.

Present status of library instruction. Many school systems now include library work as an essential part of study skills and abilities. This move is particularly true of programs existing for elementary grades and for the junior high school. With the advent of the school librarian in the secondary school, as well as the new teaching methods, comes a more persistent recognition of the value of teaching library instruction in the senior high school. More of the smaller school systems are now following the lead of the larger ones and are introducing, as efficiently as possible, the subject to their curriculums. The emphasis upon the library, as the center of present-day education, grows daily.



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THE FIRST PART OF THE HISTORY OF THE  
LIFE OF THE LATE KING OF GREAT BRITAIN

CHARLES THE SECOND

BY JOHN BURNET

IN TWO VOLUMES

LONDON

Printed by J. B. for J. B. 1704

THE SECOND PART OF THE HISTORY OF THE  
LIFE OF THE LATE KING OF GREAT BRITAIN

CHARLES THE SECOND

BY JOHN BURNET

IN TWO VOLUMES

LONDON

Printed by J. B. for J. B. 1704

## LIBRARY TESTS

Development of library tests. The last decade has seen the development of the library test. These first instruments are, for the most part, diagnostic in form since library instruction is still in the process of being standardized. As pre-tests, they are helpful guides to the instruction needed by individual students.

As library instruction becomes more nearly standardized and as certain definite units of instruction are incorporated into the courses of study for schools at all levels it will be possible to know somewhat accurately just what library knowledges and skills have already been acquired by a high school or college freshman. At the present time, however, when this standardization is lacking and students entering high school or college differ so widely in their library experience, diagnostic or pre-tests to determine what students already know are very valuable. <sup>1/</sup>

Existing library tests. There are few well constructed library tests at present that seem to fit the need of the teacher or librarian who wishes to cover library instruction thoroughly.

In the writer's opinion, Test 9, "Use of Sources of Information," of the Iowa Tests of Educational Development stands out as the best standardized test on the high school level. It is, of course, one of a battery and is not available for the average teacher's use. It is a good attempt, however, to measure library knowledge in problem form.

Test 9, "Use of Sources of Information," is a rather interesting test which measures: (a) familiarity with contents of standard reference sources in general (e.g., dictionary, encyclopedia) and some sources in particular (e.g., Popular Mechanics, Hygeia, National Geographic), and (b) practical judgment -- making a sensible decision as to which reference to use when, as in many cases, some

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<sup>1/</sup> Ingles and McCague, op. cit., p.16.

The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the conservation of energy. The second part of the paper is devoted to a discussion of the experimental results of the study of the structure of the atom. It is shown that the experimental results are in good agreement with the theoretical predictions of the theory of the structure of the atom.

must be eliminated on the basis of their titles. The problems and the items are good. 1/

Other library tests mentioned by Buros 2/ with a brief description of each are as follows:

Library Test for Junior High Schools. Prepared by the Committee on Tests of the School Library Association of California under the direction of Jeannette Vander Ploeg, Associate Professor in Librarianship, San Jose State College.

A test for Grades 7, 8, 9. Contains a total of fifty-one items divided among five parts: I. The Book, II. Arrangement of Books, III. Card Catalog, IV. Dictionary and Encyclopedia, V. Miscellaneous Books. Measures primarily information concerning library materials. A possible test for the ninth grade but rather young in its approach.

Library Usage Test. Elma R. Smith, Turner E. Smith and Co.

A test for Grades 11-13 with eight subtests: a. Using the Library, b. Using the Card Catalogue, c. Using Books, d. Using the Dictionary, e. Using Reference Books, f. Using Magazine Indexes, g. Using Encyclopedias, h. Using Library Abbreviations.

Peabody Library Information Test. Louis Shores and Joseph E. Moore, Educational Test Bureau.

A diagnostic test on three levels: Grades 4-8, 9-12, 13-16. Considered good for its purpose.

The tests mentioned above seem to be as outstanding as any one can find on the market at present. Many such tests are now appearing, some in booklet form, some mimeographed by large school systems such as Denver, many as exercises in library manuals and workbooks. They are practically all usage tests and diagnostic in nature.

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1/ Buros, Oscar Krisen, ed., The Third Mental Measurements Yearbook (New Brunswick: Rutgers University Press, 1949), p. 12.

2/ Ibid.





### CHAPTER III

#### THE EXPERIMENT - ITS PREPARATION

It is the purpose of this chapter to describe (1) the compiling of the objectives, (2) the development of the test on the use of the library, and (3) the final form of the unit as offered to schools cooperating in this experiment.

Reading for objectives. Extensive research went into the compiling of the objectives. It began with a study of school texts such as Gaining Language Skills by Chapman, which contains the chapter on the library that most language books are now including. Then followed the examination of technical books like The Library Key by Zaidee Brown, Teaching the Use of Books and Libraries by May Ingles and Anna McCague, Teacher-Librarian's Handbook by Mary P. Douglas, and How to Locate Educational Information and Data by Carter Alexander.

Among the booklets now printed to teach the use of the library, the following proved helpful: How to Use the Library, by Angela M. Broening and others, How to Use the Library by Frank S. Stephens and Gale Smithe, Library Manual by Marie A. Toser.

Study was also made of outlines already set up in school systems such as the Library Manual for Virginia Public Schools, Reading Abilities Basic to Effective Study for the Madison, Wisconsin Public Schools and other references made to existing local courses by various educational books and periodicals.

Direct study of reference books themselves -- general as well as spe-



cific -- helped in the detailed organization of the objectives. To aid this individual study of books for research, many publishers send either free explanations to help in the use of their publications or illustrative pamphlets for a minimum charge. Examples of these are: How to Use the READERS' GUIDE TO PERIODICAL LITERATURE by the H.W.Wilson Company; The Look-It-Up Book by the Quarrie Corporation, publishers of the World Book Encyclopedia; How to Use WEBSTER'S NEW INTERNATIONAL DICTIONARY by G. and C. Merriam Company.

Objectives formed as basis of unit and test. The following objectives are the result of the research done for this study:

- I. To regard books as essential tools of learning
  - A. To be acquainted with the various parts of a book
  - B. To realize the purpose of each part
- II. To be familiar with the organization of the library
  - A. To have a working knowledge of the Dewey Decimal System
  - B. To be able to use the card catalog skilfully
  - C. To know the location of books on the library shelves
- III. To use reference books efficiently
  - A. To recognize the type suitable to one's problem
  - B. To be able to use each type to advantage
- IV. To realize the value of the magazine as a reference
  - A. To recognize the type of periodical suitable for one's problem
  - B. To know how to use the Readers' Guide
- V. To recognize different reading techniques in research
  - A. To read to construct a working bibliography
  - B. To read for references with direct bearing on one's problem
  - C. To read quickly for an over-all picture
  - D. To read for note taking





- VI. To understand the importance of the bibliography
  - A. To be familiar with different forms of bibliographies
  - B. To be able to construct a bibliography
- VII. To use information gained from books and periodicals efficiently
  - A. To be able to take accurate notes
  - B. To be able to make good outlines

Construction of library test. The experimental form of the library test was divided into three parts: I. Using the Library Efficiently, which consisted of fifty multiple-choice items based upon all of the objectives except the fifth one, the stress being placed upon knowledges; II. Using the Library Skilfully, which was divided into three sections with a total of thirty multiple-choice items -- (a) Use of the Card Catalog, (b) Use of Guide Words, and (c) Use of the Index; III. Solving Reading Problems, which contained thirty-seven possible answers to twenty-seven research problems, also in multiple-choice form.

It was an effort to test for (1) knowledges, (2) skills, and (3) practical appliance of knowledge.

Procedure of initial experiment. A unit of four weeks in length was taught to sixty-two pupils of Grade 9 at Scituate High School during May of 1948. Since these students had never had instruction on the use of the library, the writer endeavored to present the material as thoroughly as possible -- teaching directly from the objectives outlined in the unit that is included with this study.

At the end of the instruction given in the freshman English classes, these pupils were given the library test, previously described, as an achievement test. Some of the basic information about this initial experiment follows:





Total number of pupils tested	- - - - -	62
Total number of items in test	- - - - -	117
Range of raw scores on test	- - - - -	43 - 93
Mean raw score	- - - - -	70.44
Standard Deviation	- - - - -	12.78

Additional comment as to results of experiment. The next fall, when these pupils, then tenth graders, were given the Iowa Tests of Educational Development, the average percentile rank of this group on Test 9, "Use of Sources of Information," was 98.7, a very substantial gain over the 50th percentile and the 40th percentile ranks of the two preceding tenth grade groups of the years 1947 and 1948 respectively, who had received no formal library instruction.

If these pupils were able to retain sufficient knowledge from May until November, with a long vacation intervening, to compare so favorably with the norms of this standardized test, it would appear that this was sufficient proof of the value of the unit on library instruction.

Analysis of the initial test. Although the unit seemed, on the whole, to be satisfactory, the test itself proved to have several weaknesses. In the first place, the format was poor. One hundred seventeen multiple-choice questions of four parts each make a very unwieldy instrument, especially when run off on the duplicator. Then, too, the test was too long for a forty-minute period.

Upon further analysis it was found that quite a number of the items differentiated significantly between the upper and lower quartiles of the group. The items in Part I, which tested library knowledges, showed up better than the rest of the items although some problems in Part III seemed of value as well as one section of Part II on the use of guide words.

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See p. 17 for the description of the contents of the preliminary test.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is divided into two main sections: the first section deals with the general situation of the country and the progress of the work during the year, and the second section deals with the results of the work during the year.

2. The second part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

3. The third part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

Basis of revision of test. In the light of this preliminary analysis it seemed advisable to eliminate items on library skills and to retain the best items of Part I and Part III, in this way constructing an instrument to measure knowledge and the application of this knowledge. To these original items were added others that would measure the specific objectives set up at this time for the test alone.

Purpose of revised test and statement of objectives. The purpose of the revised test is to determine the ability of the student to use a reference library in order to solve his research problems. The writer assumes, at this time, that the individual has been properly trained in the mechanics of library skills; namely, that he can (1) locate words correctly in the dictionary, (2) select a volume from a set of encyclopedias quickly, (3) determine the key word of a topic with no difficulty, and (4) use efficiently such helpful devices for locating references as the card catalog, Readers' Guide, and indices of all kinds. Any items relating to skills are included only because of their direct relationship to the following objectives:

1. Books are essential tools of learning. It is necessary for the student to be acquainted with each part of a book, and to know its purpose that he may read references efficiently.
2. Since the majority of libraries use the Dewey Decimal System, it is, therefore, advisable that the student understand the organization of the library and the arrangement of books on the shelves so that he may find quickly the references he has already located in the card catalog.
3. There are reference books of many kinds and for many different purposes. The student should recognize the value of the encyclopedia, to realize which set is most valuable for his particular purpose. He should use to advantage the dictionary, the thesaurus, the books of synonyms, and all aids available for the improvement of his vocabulary. He should be acquainted with outstanding books and sets of books that are written on specific subjects, such as the Book of Popular





Science and the Dictionary of American Biography. He should know how to use The World Almanac, atlases, gazeteers, year-books, and other such specific aids.

There are also many periodicals of value to the research student. Since Readers' Guide is the best index to such references, the individual should recognize its proper value.

Newspapers are another source of reference for the student. He must be familiar with the style of the news article in order to read to advantage as well as with other sections of the paper.

4. As reading plays a major part in all reference work, the student should learn to (1) read to construct a bibliography, (2) read to check references for information with direct bearing on his problem, (3) skim for an over-all picture, (4) read for note taking.
5. The student needs to learn sources of bibliographies, methods of building bibliographies, forms for bibliographic cards and for final bibliographies in list form.
6. In order to use the information gained from research in the library, the student has to learn to take accurate, usable notes, and to outline his material as a basis for his final report whether it be oral or written.

Form of revised test. The revised test, entitled An Inventory Test on Library Information,<sup>1/</sup> is divided into two parts. Part I consists of forty multiple-choice questions to determine the knowledge of the student in regard to the stated objectives. Part II consists of forty problems, also in multiple-choice form, to determine whether the student can use this knowledge in life-like situations.

The unit elaborated. It was necessary, in setting up this experiment, to construct a unit that could be easily interpreted by other instructors besides the author. The original, outlined objectives were used as the

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<sup>1/</sup> A copy of the test and the separate answer sheet used may be found in the appendix.

*[The text in this section is extremely faint and illegible. It appears to be a list or a series of entries, possibly names or dates, arranged in a structured format.]*

core of instruction. To each of these objectives, however, was added an introductory explanation of the objective and suggestions for teaching it.

As it was feared that classroom teachers with little or no library training might still be confused as to the approach to assume in teaching this unit, there was included Sixteen Lessons on the Use of Library Information with definitely worked out assignments that might be followed from day to day. It might be added that these suggestions were not purely experimental at this time but were the result of previous experience in teaching library information.



## CHAPTER IV

### PLAN FOR THE EXPERIMENTATION

The purpose of this chapter is to describe the population used in the experiment, the design of the experiment, and the different community reactions to the experiment.

Nature of the population used. This experiment was conducted in ninth grade English classes of four different communities during the spring of 1949. Enough pupils were utilized to yield 416 cases with the necessary data: Middleboro, Massachusetts (136 cases); Sanford, Maine (94 cases); Scituate, Massachusetts (66 cases); South Portland, Maine (120 cases). Although no large city school was represented in the experiment, the small schools of a few hundred and the medium-sized school of 500-600 students would appear to be typical of the majority of localities in the United States.

An attempt was made to select groups of normal ability. In each school, a single English instructor administered the library tests and taught the unit to all of his divisions regardless of their composition. In other words, it is felt that this study is based upon a sampling of average students' work in the average public high school in New England.

If one wishes to regard the representativeness of the experimental group from another point of view, he might well consider the home environments represented. One of the schools, for example, is small with no foreign element; one draws pupils not only from a manufacturing area but from outlying farming districts as well; another has the features of a city



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school; and a fourth possesses a number of foreign-speaking pupils. An interesting cross section of humanity!

Instruction and environment being equally typical, let us look at the potential ability of the population used. The Terman-McNemar Test of Mental Ability was chosen to obtain the intelligence ratings of the group for several reasons: (1) It is entirely verbal, (2) its scores may be interpreted in deviation IQ's that are more likely to be accurate than ratio IQ's, and (3) the test has proven satisfactory in many such experiments as this. The mean intelligence quotient of the experimental group, whose IQ's ranged from 51 - 150, was found to be 103.6, an indication of average ability for this grade. The standard deviation of scores was 14.99. This figure is quite comparable to the Terman-McNemar deviation of 16.0 when one considers that the latter deviation was set arbitrarily as a unit of measurement for a standard score scale based on the median of a very large unselected 14-year age group, whereas the former was determined from a more selected age group of the ninth grade only. Since, at this grade level, many of the mentally retarded are no longer in school, the pupils may be considered more selected from the point of view of intelligence than those found on the lower grade levels that were included in the standardization of the Terman-McNemar test. As Figure 1 indicates, the distribution of quotients for the experimental group was approximately symmetrical.

This study, therefore, appears to have been made of students of average mental ability as well as of average environment and instruction.

The first part of the paper discusses the importance of maintaining accurate records of all transactions. It is essential for the business to have a clear and concise record of all income and expenses. This will allow the business to track its financial performance over time and identify areas for improvement. The second part of the paper discusses the importance of maintaining accurate records of all assets and liabilities. This will allow the business to track its net worth over time and identify areas for improvement. The third part of the paper discusses the importance of maintaining accurate records of all debts and obligations. This will allow the business to track its financial obligations over time and identify areas for improvement. The fourth part of the paper discusses the importance of maintaining accurate records of all taxes and other legal obligations. This will allow the business to track its financial obligations over time and identify areas for improvement. The fifth part of the paper discusses the importance of maintaining accurate records of all other financial information. This will allow the business to track its financial performance over time and identify areas for improvement.

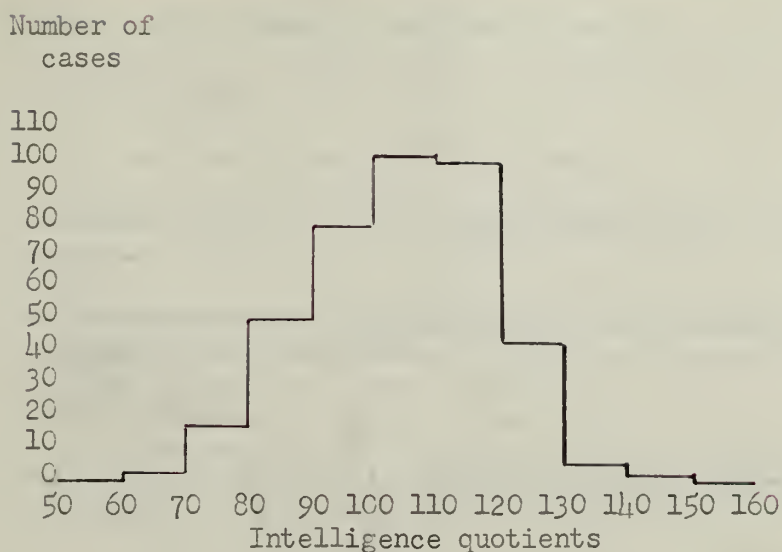


FIGURE 1

Distribution of Terman-McNemar Intelligence Quotients  
for 416 Ninth Grade Pupils

Design of the experiment. As has been previously stated, three schools besides that of the writer, were included in this experiment. Although either the principal or the superintendent was approached first in each case, further communication was carried on with those teachers directly responsible for the results. Each time, after the initial arrangements were made, the following equipment was either mailed or taken personally to the individual schools:

1. Terman-McNemar Tests of Mental Ability for the entire group in case it might be convenient for the guidance director to administer the test.
2. A sufficient number of An Inventory Test on Library Information to be used in the English class itself.
3. Directions for administering both tests.
4. Answer sheets for both tests along with IBM pencils.
5. A complete unit of instruction on the use of the library in bound form with a few samples of illustrative material obtained from the publishers.

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6. A plan called "Sixteen Lessons on the Use of Library Information," included only as a suggestion for conducting the course.

In each school the same procedure was followed:

1. The administration of the Terman-McNemar Test of Mental Ability.
2. The administration of An Inventory Test on Library Information as a pre-test.
3. The teaching of the unit.
4. The administration of An Inventory Test on Library Information as a final test.

Table I gives an idea of the dates when the library test was administered at each school and in so doing indicates the approximate amount of time spent by each group on the unit.

TABLE I

Dates of Administration of Library Test

Community	Pre-Test	Final Test
Scituate, Massachusetts	March 7	April 8
Middleboro, Massachusetts	March 17	April 13
Sanford, Maine	March 29,31	May 3,4
South Portland, Maine	April 5,6,7	May 6

|| One week out for spring vacation.

The writer was in close contact at all times with the schools cooperating in the experiment. On two occasions she was invited to visit classes where the library unit was being taught. This was a pleasant part of the experiment because of the friendly attitude of the teachers and because of their interest in the project. It was likewise gratifying to find other teachers appreciative of the value of this unit of work.

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10. 8

Upon the return of the tests, they were all hand corrected although it had been the original intention to have them scored by machine. An item count, however, was later made on the IBM machine.

As soon as possible after the correction of the tests, the results were returned to the other schools. These results consisted of (1) deviation IQ's with corresponding percentile ranks, and of (2) raw scores and percentile norms for An Inventory Test on Library Information.

Community reactions. Each community seemed alert to the need of teaching library information in the secondary school and displayed interest in the experiment. Without exception teachers and principals felt that the unit on the use of the library had been very beneficial to their students. One principal described his plan to incorporate many of the ideas of the library study in a study skills unit for another year; two of the English teachers expressed the desire to use some of the writer's material in future projects of their own.

It would not be complete to end this explanation without reference to the cooperation of two town librarians. At Sanford, one of the town librarians visited classes and explained the Dewey Decimal System and the organization of the library. At Middleboro, the classes were taken to the town library several times where the librarian did an excellent job of describing the set-up of the library and of helping the students with any problems that arose during this brief course.

There has been no mention of the procedure at Scituate since it is the school of the writer, who, as school librarian as well as English teacher, tried to do exactly as the other schools were asked to do -- no more, no less.



In conclusion, it may be said that this experiment was carried out with fine cooperation in four different but typical communities.





## CHAPTER V

### ANALYSIS OF THE DATA

This chapter presents the data concerning the validity and reliability of the instrument, An Inventory Test on Library Information, an analysis of the gains made between testings as a result of the specific instruction provided, and finally, the percentage of correct response for each item on both pre-test and final test.

#### VALIDITY OF TEST

Concept of validity. The most important characteristic of a good test is considered to be validity. It may be defined as the accuracy with which the test measures that which it is intended to measure.<sup>1/</sup> Actually, there is no such thing as perfect validity since it is impossible to eliminate all constant errors to which any type of measurement is subject. There are, however, several ways that a test-maker may endeavor to construct a valid instrument.

Curriculum validity. He may set up a working concept of that which he wishes to measure and then select items that will measure efficiently the material designated by the specific objectives that he has developed from that concept. Chapter III contains a detailed description of the objectives set up for the library test, also of the effort to obtain valid items by actual trial in a preliminary test.

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<sup>1/</sup> Lindquist, E.F., A First Course in Statistics (Boston: Houghton Mifflin Company, 1942), p.213.

The first part of the paper discusses the importance of the study of the history of the United States. It is argued that a knowledge of the past is essential for a full understanding of the present. The author then goes on to discuss the various factors that have shaped the development of the United States, including the role of the government, the influence of the economy, and the impact of the culture.

In the second part of the paper, the author examines the role of the government in the development of the United States. It is argued that the government has played a central role in the shaping of the nation, from the founding of the country to the present day. The author then discusses the various ways in which the government has influenced the development of the United States, including through its policies, its actions, and its institutions.

The third part of the paper discusses the influence of the economy on the development of the United States. It is argued that the economy has played a central role in the shaping of the nation, from the founding of the country to the present day. The author then discusses the various ways in which the economy has influenced the development of the United States, including through its growth, its structure, and its policies.

Finally, the author discusses the impact of the culture on the development of the United States. It is argued that the culture has played a central role in the shaping of the nation, from the founding of the country to the present day. The author then discusses the various ways in which the culture has influenced the development of the United States, including through its values, its beliefs, and its traditions.

Face validity. If these objectives are stable and truly indicative of that which should be taught, and if the items obviously measure these objectives, then the test may be said to have face validity. According to Professor Rulon,<sup>1/</sup> there is no more conclusive proof of a test's validity. The inclusion of many of the items in An Inventory Test on Library Information was based upon this theory of validation. As an insurance, however, against poor content and form, the items were offered for critical analysis to several students of measurement and to one authority in that field. The items were re-worded, whenever it was considered advisable, in order to obtain clarity and good form. Several were cast out because it was thought that they did not measure what they purported to measure.

Statistical validity. Whenever possible, the validity of a test is further substantiated by finding the correlation between the test score and some other criterion which is obviously valid and is assumed to be reliable. In other words, statistical validity always follows and is based upon some face valid criterion. In this case no other face valid criterion was available but an indirect evidence of validity is found in the amount of the gain in score as the result of the specific instruction given. This assumes, of course, that the instruction itself is obviously related to the stated goals of instruction, and this does not seem to be an unreasonable assumption in this case.

Also a study of the correlation between the first and second administrations of the test is, in a sense, an evidence of validity. In this

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<sup>1/</sup> Rulon, Philip J. "Validity of Educational Tests," Test Service Notebook, No. 3, (New York: World Book Company, 1947), p.1.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial data. This includes not only sales and purchases but also expenses and income. The document further states that regular audits are necessary to verify the accuracy of these records and to identify any discrepancies or errors. It also mentions that proper record-keeping is essential for tax purposes and for providing a clear history of the company's financial performance.

The second part of the document outlines the procedures for handling cash and credit transactions. It specifies that all cash receipts should be deposited in the company's bank account immediately and that the corresponding amount should be recorded in the cash ledger. For credit sales, the document requires that invoices be issued promptly and that the accounts receivable be monitored closely to ensure timely payment. It also provides guidelines for handling returns and discounts, stating that these should be recorded as adjustments to the original sales entries.

The third part of the document addresses the management of inventory. It advises that a perpetual inventory system should be used to track the quantity and value of goods on hand. This involves recording every purchase and sale of inventory items and conducting regular physical counts to reconcile the book inventory with the actual stock. The document also discusses the importance of setting appropriate reorder points and safety stock levels to prevent stockouts and minimize carrying costs.

The final part of the document provides a summary of the key principles of sound financial management. It reiterates the importance of honesty, accuracy, and transparency in all financial reporting. It concludes by stating that a well-maintained set of financial records is not only a requirement for legal compliance but also a valuable tool for making informed business decisions and for ensuring the long-term success of the organization.



instance, what is desired is not a high correlation but rather a comparatively low one indicating that the effect of specific instruction has been to change the rank order of the original scores. Thus those who showed a low level of original knowledge made comparatively larger gains. This relationship becomes even more meaningful when considered along with the correlation of the inventory test with the mental ability test.

An Inventory Test on Library Information was correlated with the Terman-McNemar Test of Mental Ability for both pre-test and final test. The correlation of the pre-test with the Terman was found to be .67 which, when corrected for attenuation, becomes .77. While this corrected correlation indicates a substantial relationship between pre-test score and intelligence, the relationship is far from being perfect. The magnitude of the correlation probably is due largely to the fact that there is little specific instruction in the areas covered by the inventory test at the lower grade levels; hence, the test draws upon the whole life experience of the child. Another reason for the substantial relationship found is the obvious importance of the high level of verbal ability to obtain a high score on either of the tests.

The correlation between the inventory test and the Terman-McNemar test in the case of the final administration of the inventory test was .53. Corrected for attenuation this becomes .57. This value is substantially lower than the correlation with the pre-test and reflects the effect of specific instruction. This is entirely logical and substantiates the argument that the inventory test is a valid measure of the outcomes of such instruction.

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 the second is the fact that the  
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For a final estimate of statistical validation a correlation was calculated between the library pre-test and Test 9, "Use of Sources of Information" of The Iowa Tests of Educational Development, based upon the scores of 132 students from Memorial High School, Middleboro, Massachusetts. The pre-test results were used because the Iowa test likewise preceded the unit on the library. The correlation between these two similar tests was found to be .71 (corrected for attenuation: .85). This figure would seem to indicate that An Inventory Test on Library Information compares favorably with a well known standardized test, at least in a small sampling. The latter is a test composed entirely of problems to be solved on the use of library information, whereas the writer's test, as its title indicates, is an attempt to delve into all angles of knowledge that the student needs in order to solve his library problems as well as an attempt to measure his ability to solve them. Since the inventory test is necessarily broader in its scope, one could not expect a much higher correlation than the one obtained.

All of the correlations quoted have been computed by the Pearson Product-Moment Coefficient of Correlation method and may be considered accurate since they were worked out on Durost-Walker Correlation Charts that have the advantage of possessing several checks throughout the computation. Table II summarizes the correlations briefly.





TABLE II

Intercorrelations of An Inventory Test on Library Information, the Terman-McNemar Test of Mental Ability, and Test 9, "Use of Sources of Information," of The Iowa Tests of Educational Development

N = 416

Tests correlated	Zero order correlation	Correlation corrected for attenuation
Library Pre-Test vs. the <u>Terman-McNemar Test of Mental Ability</u>	.67	.77
Library Final vs. the <u>Terman-McNemar Test of Mental Ability</u>	.53	.57
Library Pre-Test vs. Library Final	.59	.70
Library Pre-Test vs. <u>Test 9 of The Iowa Tests of Educational Development</u>	.71	.85

|| Based upon 132 cases at Middleboro, Massachusetts, for whom Iowa data was available.

#### ANALYSIS OF LIBRARY TEST SCORES

Distribution of scores. The distribution of the 416 raw scores for the library pre-test was approximately symmetrical as Figure 2 indicates. The mean of the experimental group on this administration of the test was 28.46 with scores ranging from 4 - 54. The standard deviation of the scores from the mean was 8.59.



1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the problem and the objectives of the research.

2. The second part of the report is a detailed description of the methods used in the study. It includes a discussion of the experimental design, the data collection procedures, and the statistical analysis.

3. The third part of the report is a presentation of the results of the study. It includes a discussion of the findings, a comparison of the results with previous research, and a conclusion about the significance of the study.

4. The fourth part of the report is a discussion of the implications of the study. It includes a discussion of the limitations of the study, the strengths of the findings, and the potential for future research.

5. The fifth part of the report is a summary of the study. It includes a brief overview of the main findings and a final conclusion about the significance of the study.

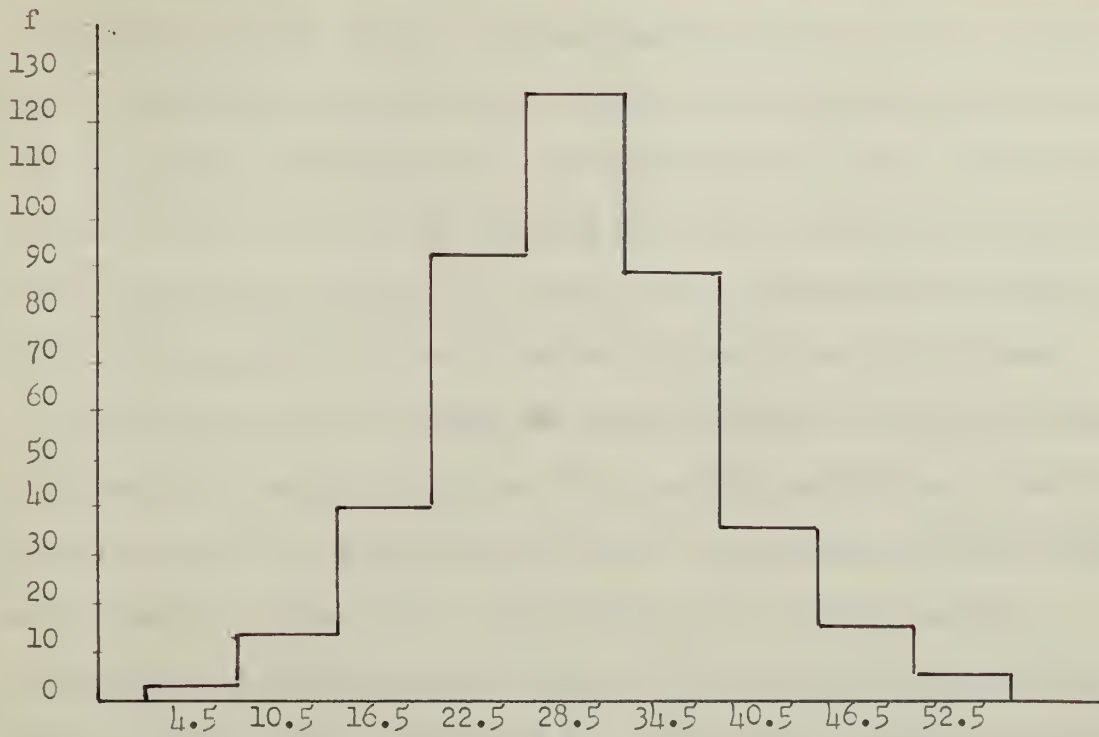


Figure 2

Library Pre-Test Scores  
Distribution of 416 Raw Scores of Library Pre-Test

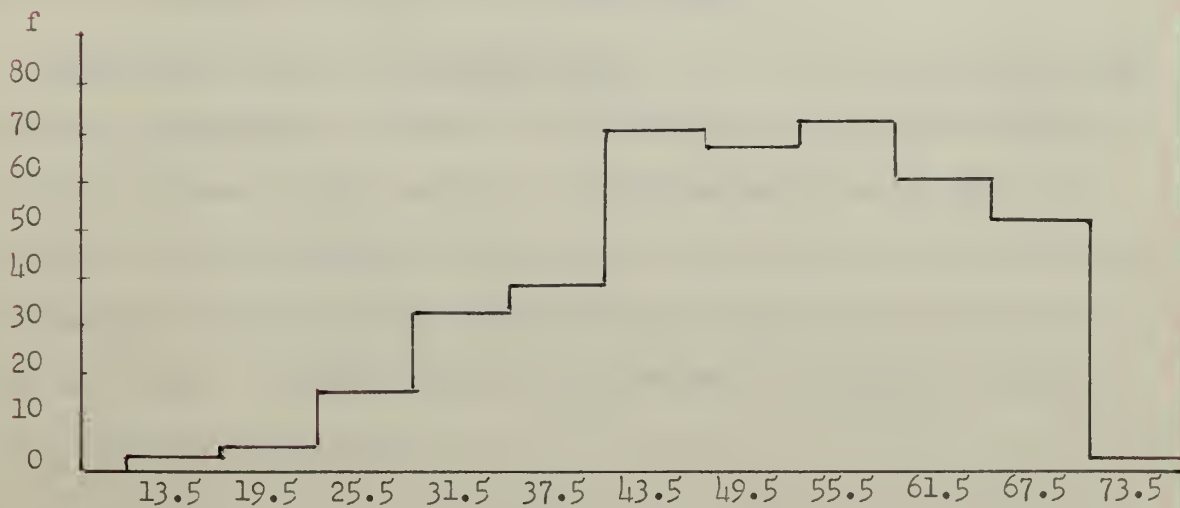


Figure 3

Library Final Scores  
Distribution of 416 Raw Scores of Library Final

250



As Figure 3 shows clearly, the distribution of scores for the same group on the final administration of the test skewed negatively as a result of the unit of instruction. The lowest score made was 13; the highest, 71. This time the group answered correctly an average of 49.49 items of the possible 80, thus making a gain of 21 score-points at the mean. The scores on this final test have a standard deviation of 12.41 points.

The variability of the scores may also be observed by studying Table III and Figure 4. It will be seen that from the 10th percentile to the 75th percentile there is a steady rise of gain in the differences found between the two sets of scores, with a slight drop at the 90th percentile.

In order to establish statistically that the differences between the first and second testing are beyond the chance level, although they seem obviously to be so, certain percentile points were selected to be compared. These percentiles are shown in Table III together with their Standard Errors and the difference ratios. It is to be noted that in every case the differences were far beyond the chance range.

Percentage of gain on individual items. The copy of An Inventory Test on Library Information, included in the appendix of this study is marked to show percentage of gain made by the experimental group on each item. The first figure indicates the percentage answering the item correctly on the pre-test; the second, the percentage answering the item correctly on the final test. It will be noted that there was a substantial gain made on the majority of the items.

The first part of the paper discusses the importance of the  
 research and the objectives of the study. It also outlines the  
 methodology used in the study and the results of the research.  
 The second part of the paper discusses the findings of the study  
 and the implications of the research. It also discusses the  
 limitations of the study and the need for further research.  
 The third part of the paper discusses the conclusions of the study  
 and the recommendations for future research. It also discusses the  
 significance of the research and the contribution of the study to  
 the field of research.



If one examines these percentages carefully, he will note the greatest gains were made on items based upon (1) Readers' Guide, (2) the bibliography, (3) organization of the library, and (4) the book and its mechanism. The reasons for such gains may be that these items suggest (1) something tangible to learn, (2) memory by rote, or (3) a new subject to catch the interest of the student. There is also the suggestion that, because these phases of library were new to the class, the teacher stressed them in presenting the unit and took it for granted that the students knew more than they did about common references such as the dictionary and the encyclopedia.

The least amount of gain was made on items referring to special references such as The World Almanac, other yearbooks, New Larned History, etc. It is, of course, a controversial point as whether to teach library references by titles or by general use. Aside from this point, however, it is likely that the small amount of gain among these items may be attributed to lack of library facilities or to lack of experience on the part of the pupil in actual use of such references.

In conclusion, it may be observed that the greatest percentage of gain was found in Part I of An Inventory Test on Library Information on the items that measure knowledge only. The least amount of gain was in Part II, which measures the ability of the student to apply his knowledge to specific problems.

The results of two administrations of An Inventory Test on Library Information were correlated to determine the relationship of the pre-test to the final test after an interval of approximately a month during which time instruction was being given. This was found to be .59 (corrected



TABLE III

A Comparison of Selected Percentiles on An Inventory Test on Library Information before and after Instruction

Percentile Ranks	Selected Percentiles with Standard Errors		Difference with Standard Error	Difference SE <sub>diff</sub>
	Pre-Test	Final Test		
P <sub>10</sub>	17 ± .72	32 ± 1.04	15 ± .85	17.6
P <sub>25</sub>	22 ± .57	41 ± .83	19 ± .68	27.9
P <sub>50</sub>	28 ± .53	50 ± .76	22 ± .62	35.5
P <sub>75</sub>	33 ± .57	59 ± .83	26 ± .68	38.2
P <sub>90</sub>	39 ± .72	65 ± 1.04	26 ± .85	30.6

TABLE IV

Correlation between Library Pre-Test and Library Final  
 $r = .59^a$

2 <sup>b</sup>	Library Pre-Test (mid-points)																		Total
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	
71-73														1		1			2
68-70								1	1		4	3	4	2	2	2	2	1	22
65-67							1	1	2	5	7	5	3	1	3		1		29
62-64					2		1	1	2	7	2	4	2	2		1		1	25
59-61							1	2	7	5	5	6	3	3	2	1			35
56-58						2	2	5	2	9	4	4	3		1	1			33
53-55					1	1	2	4	9	4	6	6	2	3					38
50-52				1	1	2	2	3	6	9	4	3	1	1					33
47-49				1	1	3	3	5	2	7	5	4	2	1	1				35
44-46		1			3	2	4	7	7	2	5	1							32
41-43				1	3	4	6	6	9	5	4								38
38-40					2		5	8	3	3	4								25
35-37				1	2	1	1	4	4		1								14
32-34				2	1	2	3	1	2	5									16
29-31				1	1	2	6	2	3	1									16
26-28		1			1		2		1										5
23-25				3	2	1		1	1	1			1						10
20-22			2								1								3
17-19		1		1				1											3
14-16	1																		1
11-13									1										1
Total	1	2	3	11	20	20	39	52	62	63	52	36	21	14	9	6	3	2	416

a Corrected for attenuation = .70

b Library Final

22.1

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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for attenuation: .70). Table IV shows the actual scatter plot of these two sets of scores.

The following observations may be made from studying Table II:

1. Of the 416 students used, 36 per cent were near or well above the mean of each test. Those of the upper right quadrant probably represent the good students and the conscientious ones of at least slightly more than average mental ability.
2. There were 35 per cent of the total group in the lower left quadrant. These students were at the mean or below on each test. Here are those of low ability who consistently do poor work as well as many of the average students. As might be expected, there is a greater dispersion of scores here than in the upper right quadrant.
3. In the upper left quadrant the scores indicate that 15 per cent of the group made a remarkable progress through the period of instruction, were below the mean in the first test and several way above the mean in the final test.
4. The lower right quadrant is hardest to explain. There were 13 per cent of the experimental group near the mean or above on the pre-test but on the second test they were below the mean. Variable factors may have caused this situation. It is possible that these students guessed better the first time than the second. It may be that emotional reactions or even habitual absences from the classroom were the reasons.

#### RELIABILITY OF TEST

Concept of reliability. Another characteristic of a good test is that of high reliability. One asks the question: Does the test measure consistently what it is intended to measure? Reliability is really an aspect of validity. As one text states rather cleverly, "a test cannot efficiently measure what it attempts to measure unless it efficiently measures whatever it does measure."<sup>1/</sup>

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<sup>1/</sup> Greene, Harry A., Jorgensen, Albert N., and Gerberich, J. Raymond, Measurement and Evaluation in the Secondary School (New York: Longmans, Green and Co., 1946), p.61.



The first part of the paper is devoted to a general  
 discussion of the problem. It is shown that the  
 problem is of great importance in the theory of  
 functions. The second part is devoted to a  
 detailed study of the problem. It is shown that  
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 functions. The third part is devoted to a  
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 the problem is of great importance in the theory of  
 functions.

In other words, validity is specific but reliability is general. To obtain perfect reliability a test would have to yield the same results each time it was administered. This condition, naturally, is impossible since variable errors are present, to some degree, in even the best of instruments. It is possible, however, to approach the ideal of high reliability.

Factors affecting reliability. It is generally conceded that the following factors<sup>1/</sup> affect the reliability of a test: (1) the length of the test, (2) the order of difficulty of items, (3) the appearance of interdependent items, (4) the form of the test, (5) inclusion of "catch questions" and (6) emotionally loaded items. These are causes of unreliability that may be found within the test itself.

In An Inventory Test on Library Information, an attempt was made to gain reliability (1) by making the test as long as possible since the longer test tends to be more reliable, (2) by including items of appropriate degrees of difficulty, (3) by using multiple-choice questions of four parts each which are considered more reliable than items with fewer alternatives. There is no special order of items according to difficulty, however, the easier items being scattered throughout the test. It was the intent of the writer not to include items that would lower the reliability of the instrument such as "catch questions," interdependent items, or emotionally loaded items.

Reliability coefficients of library tests. Reliability is usually expressed by means of a coefficient of correlation. This is a way of

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<sup>1/</sup> Mursell, James L., Psychological Testing (New York: Longmans, Green and Co., 1947), pp. 41-43.

The first of these is the fact that the  
 government has been unable to secure  
 the necessary funds to carry out its  
 policy of non-interference in the  
 internal affairs of the country.

The second is the fact that the  
 government has been unable to secure  
 the necessary funds to carry out its  
 policy of non-interference in the  
 internal affairs of the country.

The third is the fact that the  
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The fifth is the fact that the  
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 internal affairs of the country.

evaluating the internal consistency of the instrument. Although it is thought desirable to estimate the reliability of a test by comparing two forms of the same test, it was impossible for the writer to employ this method as the library test has only the one form. Therefore, the "chance-half" or "split-half" procedure was followed.

By the "split-half" method is meant the arbitrary division of a test into two parts. A common way of making this division is to obtain separate scores on the odd-numbered and the even-numbered items and then to correlate these scores to determine the relationship between the halves of the test. Since the resulting coefficient is for a test exactly half as long as the original, it is customary to "step up" the correlation by using the Spearman-Brown Prophecy Formula, which was devised for this purpose.

Table V shows the results obtained from applying the "split-half" method to the two administrations of An Inventory Test on Library Information. The higher coefficient on the final test follows the theory that the more students know about the subject being tested, the greater the reliability of the instrument.

TABLE V

Reliability of Library Tests by the "Split-Half" Method

Test	$r$ 1/2 I/II	Mean	S.D.	Corrected $r$
Pre-Test	.64	28.46	8.59	.78
Final Test	.83	49.49	12.41	.91

The first part of the paper discusses the importance of maintaining accurate records of all transactions. It is essential for the business to have a clear and concise record of all income and expenses. This will allow the business to track its financial performance over time and identify areas for improvement. The second part of the paper discusses the importance of maintaining accurate records of all assets and liabilities. This will allow the business to track its net worth over time and identify areas for improvement. The third part of the paper discusses the importance of maintaining accurate records of all taxes paid. This will allow the business to track its tax liability over time and identify areas for improvement. The fourth part of the paper discusses the importance of maintaining accurate records of all debts. This will allow the business to track its debt liability over time and identify areas for improvement. The fifth part of the paper discusses the importance of maintaining accurate records of all equity. This will allow the business to track its equity over time and identify areas for improvement. The sixth part of the paper discusses the importance of maintaining accurate records of all other financial information. This will allow the business to track its overall financial performance over time and identify areas for improvement.



## ESTABLISHMENT OF NORMS

Percentile norms were established for both the first and second administrations of An Inventory Test on Library Information in order to report the results of the study to the communities that had participated in it. These norms were obtained by plotting the scores on the Otis Normal Percentile Chart. Figure 4 shows the distribution of scores and the percentile curve for each testing.

Percentile ranks were worked out for each increment of score point. Since the population used in this experiment proved to be a representative one, it is to be concluded that these norms<sup>1/</sup> may be used for continued administrations of An Inventory Test on Library Information.

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<sup>1/</sup> See appendix for both sets of percentile norms.

The first of these is the fact that the  
the second is the fact that the  
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the ninth is the fact that the  
the tenth is the fact that the



For

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By *Arthur S. Otis*  
City

City

Figure 4 -- Cumulative Normalized Percentage Graph Showing Relationship between Pre-Test and Final Test

A horizontal scale bar with markings at  $-3\sigma$ ,  $-2\sigma$ ,  $-\sigma$ ,  $M$ ,  $+\sigma$ ,  $+2\sigma$ , and  $+3\sigma$ .





## CHAPTER VI

### SUMMARY AND CONCLUSIONS

Brief overview of the study. The problem developed from an individual need of a unit and test on the use of the library. Research justified the need as general. After a careful study of existing sources was made, detailed objectives were set up, upon the basis of which both the unit and a test were built.

First tried out on a small group of ninth grade students, the unit proved substantially successful; the test, promising. To make the latter more reliable, it was decided to narrow its scope to the measurement of library information and to set aside items intended to measure skills for another study. New items were then added and all were critically analyzed as to form and content until finally An Inventory Test on Library Information emerged.

An experiment was conducted in ninth grade English classes of four different communities to prove the reliability and validity of the inventory test, also to note the effect of instruction upon the instrument. The procedure followed was: (1) administration of the Terman-McNemar Test of Mental Ability to determine the potential ability of the students, (2) administration of An Inventory Test on Library Information as a pre-test, (3) teaching of the unit on the use of the library, (4) final administration of An Inventory Test on Library Information.



[Faint, illegible text spanning the main body of the page, likely bleed-through from the reverse side.]

Major outcomes. The following inferences may be drawn from the results of the study:

1. An Inventory Test on Library Information correlated highly with intelligence as tested by the Terman-McNemar Test of Mental Ability. The relationship was closer with the pre-test which drew from the whole life experience of the child than with the final test which was the outcome of specific instruction. In either case, the library test correlated with intelligence well above the chance level.
2. There was a marked correlation between the two administrations of An Inventory Test on Library Information.
3. When correlated with Test 9, "Use of Sources of Information," of the Iowa Tests of Educational Development, An Inventory Test on Library Information compared favorably although the sampling was small.
4. The reliability coefficient for the final administration of An Inventory Test on Library Information was higher than that for the pre-test. One reason for this difference was the effect of specific instruction.
5. The final administration of An Inventory Test on Library Information indicated a substantial improvement on the part of the experimental group. It was proven statistically that the differences of the scores were far beyond the chance error.
6. With few exceptions, individual items of An Inventory Test on Library Information showed a good percentage of gain made by the experimental group after instruction. The exceptions, for the most part, were in Part II, which consists of problems on the use of library information.

Conclusions. The following conclusions may be made from observing the outcomes just described:

1. The gains made by the experimental group on An Inventory Test on Library Information as a whole and upon the items individually indicate the worth of the unit on the use of the library.
2. Since the scores on Part II, which tests application of knowledge, were lower on both administrations of An Inventory Test on Library Information, and showed least percentage of gain in the item study, it may be concluded that continued use of the library should follow the specific unit of instruction.

4.8

3. An Inventory Test on Library Information may be considered valid for its purpose in that it appears statistically to measure what it purports to measure.
4. An Inventory Test on Library Information is more reliable as a measure of achievement after instruction than as a pre-test. This is a logical result of the "purifying" effect of such instruction, i.e., the test measures less the general effect of life experience and more the outcome of specific instruction.

Limitations of the study. There are several limitations to this study:

1. The teaching time of the unit was not long enough to stress all phases of library work, nor was it sufficient to give the individual student a chance to become acquainted with all types of books through actual usage.
2. It was neither possible nor practicable to test students with more experience in the use of the library in order to compare their results on An Inventory Test on Library Information with those of the experimental group who obtained their library knowledge primarily from the brief unit.
3. One important phase of library instruction was not stressed in the test -- skills involved in the efficient use of the library -- because of the necessity of limiting the scope of the inventory test.
4. It was not possible to compare reading ability with An Inventory Test on Library Information because of lack of data for the entire experimental group.
5. The only correlation that could be made with a similar test was with a small sampling of Test 9, "Use of Sources of Information," of the Iowa Tests of Educational Development.

The first part of the paper discusses the  
 importance of the study and the objectives of the research.  
 The second part describes the methodology used in the study.  
 The third part presents the results of the study.  
 The fourth part discusses the implications of the findings.  
 The fifth part concludes the paper and suggests areas for future research.



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22

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is divided into two main sections: the first section deals with the general situation of the country and the progress of the work during the year, and the second section deals with the specific results of the work.

2. The second part of the report deals with the specific results of the work. It is divided into three main sections: the first section deals with the results of the work in the field of agriculture, the second section deals with the results of the work in the field of industry, and the third section deals with the results of the work in the field of commerce.

3. The third part of the report deals with the financial results of the work. It is divided into two main sections: the first section deals with the income of the work, and the second section deals with the expenditure of the work.

4. The fourth part of the report deals with the general conclusions of the work. It is divided into two main sections: the first section deals with the general conclusions of the work, and the second section deals with the specific conclusions of the work.



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# AN INVENTORY TEST ON LIBRARY INFORMATION

*By Eleanor Gile*

SCITUATE HIGH SCHOOL

*YOU ARE NOT TO MAKE ANY MARKS ON THIS TEST BOOKLET;  
MARK ALL YOUR ANSWERS ON THE SEPARATE ANSWER SHEET.  
MAKE YOUR MARKS HEAVY AND BLACK. IF YOU HAVE TO  
CHANGE AN ANSWER, BE SURE TO MAKE A CLEAN ERASURE.*

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## PART I

Directions: Read each question carefully, determine the best answer, and then mark the answer space corresponding to your choice on the answer sheet. MAKE YOUR MARKS HEAVY AND BLACK. MAKE NO MARKS ON THE TEST BOOKLET. Note the way the sample item is marked.

Sample: The person who writes the book is known as the

- a. editor  
b. author

- c. compiler  
d. translator

a b c d  
|| | | |

- |   |   |
|---|---|
| <p>1. The real title of a book is always found<br/>a. on the outside cover .59-.98<br/>b. on the title page<br/>c. in the introduction<br/>d. in the preface</p> <p>2. To use an index to an encyclopedia efficiently, it is necessary to read carefully the<br/>e. introduction and title page .56-.80<br/>f. introduction and rules<br/>g. preface<br/>h. title page</p> <p>3. When you want to look up a part of a book in the card catalog, look for<br/>a. an analytic card .15-.71<br/>b. a subject card<br/>c. a title card<br/>d. an author card</p> <p>4. A dictionary that contains only the more frequently used words is said to be<br/>e. abbreviated .45-.80<br/>f. unabridged<br/>g. condensed<br/>h. abridged</p> <p>5. The first step in finding the answer to a specific problem is<br/>a. critical reading .27-.52<br/>b. skimming<br/>c. memorizing<br/>d. note taking</p> <p>6. Supplementary material in a book may be located in the<br/>e. appendix .42-.76<br/>f. index<br/>g. preface<br/>h. table of contents</p> <p>7. Individual biographies are arranged on library shelves alphabetically by the<br/>a. author of the book .30-.43<br/>b. title of the book<br/>c. subject of the book<br/>d. size of the book</p> <p>8. The only time to copy a reference exactly as it is written is when you<br/>e. outline .70-.88<br/>f. cannot express the idea otherwise<br/>g. quote<br/>h. take notes</p> | <p>9. A geographical dictionary is called<br/>a. an atlas .18-.82<br/>b. an almanac<br/>c. a gazetteer<br/>d. a thesaurus</p> <p>10. The <u>Encyclopaedia Britannica</u> is known for its<br/>e. topical dictionaries .51-.86<br/>f. ease of reading<br/>g. use of many illustrations<br/>h. detailed and careful reporting</p> <p>11. A list of writings on a certain subject is called a<br/>a. biography .50-.79<br/>b. standard catalog<br/>c. card catalog<br/>d. bibliography</p> <p>12. The best reference on a wide variety of topics is the<br/>e. dictionary .69-.83<br/>f. encyclopedia<br/>g. special reference book<br/>h. textbook</p> <p>13. The <u>Dictionary of American Biography</u> contains references about<br/>a. Americans no longer living .17-.80<br/>b. living Americans only<br/>c. living American biographers<br/>d. all important Americans</p> <p>14. All non-fiction cards in the card catalog always must contain the<br/>e. call number .59-.91<br/>f. number of pages in book<br/>g. number of illustrations<br/>h. name of the publisher</p> <p>15. The student desiring material on a subject of current significance will use the<br/>a. imprint .83-.86<br/>b. first edition<br/>c. latest edition<br/>d. reprint</p> <p>16. The weekly magazine that specializes in book reviews is<br/>e. <u>Collier's</u><br/>f. <u>The Saturday Review of Literature</u><br/>g. <u>The Saturday Evening Post</u><br/>h. <u>Book Review Digest</u> .26-.81</p> |
|---|---|

17. A safe rule to follow in outlining is never to  
 a. have a III without a IV :18-.78  
 b. write sentences  
 c. use punctuation  
 d. have a I without a II
18. Liebman, Joshua Loth, "The Most Unforgettable Character I've Met." The Reader's Digest, p. 12-16. July, 1948.  
 The form of the above item indicates that it is from a .17-.51  
 e. book index  
 f. card catalog  
 g. bibliography  
 h. magazine page
19. The best reference for an over-all picture of a new topic is the .27-.54  
 a. textbook  
 b. dictionary  
 c. encyclopedia  
 d. technical reference book
20. The part of the book whose chief purpose is to outline the material it contains is the .52-.79  
 e. table of contents  
 f. bibliography  
 g. subject index  
 h. topical index
21. One source of material for a bibliography is .46-.71  
 a. a thesaurus  
 b. a dictionary  
 c. an encyclopedia  
 d. a book of synonyms
22. Roget's Thesaurus is .05-.53  
 e. an encyclopedia  
 f. a dictionary  
 g. a book of quotations  
 h. a grammar
23. If you are looking in the library for a book on grammar, you will find it among the books numbered in the .23-.73  
 a. 800's  
 b. 300's  
 c. 400's  
 d. 200's
24. A series of definitions, or list of words or expressions to aid one's understanding of a specific subject is known as .70-.85  
 e. a gazetteer  
 f. a bibliography  
 g. an index  
 h. a glossary
25. An exception to the rule that indexes are placed in the back of the book is to be found in .41-.81  
 a. The Encyclopedia Americana  
 b. The World Almanac  
 c. Encyclopaedia Britannica  
 d. Who's Who
26. An index to all the books in the library is .44-.74  
 e. Readers' Guide  
 f. Standard Catalog for High School Libraries  
 g. the vertical file  
 h. the card catalog
27. In a final bibliography the information stated first is the .46-.86  
 a. name of the publisher  
 b. name of the author  
 c. number of pages read  
 d. the copyright date
28. A list of words to aid one's understanding of geographical references is called a .25-.94  
 e. glossary  
 f. vocabulary  
 g. gazetteer  
 h. geography
29. References to important material not included in the text are called .52-.70  
 a. indexes  
 b. illustrations  
 c. cross references  
 d. footnotes
30. In the classification, 973.3, the decimal indicates .45-.73  
 e. a subdivision of 970  
 f. a subdivision of 973  
 g. additional information  
 h. a subdivision of 900
31. Reading quickly for an over-all picture of a subject is called .82-.90  
 a. criticizing  
 b. skipping  
 c. skimming  
 d. browsing.
32. All cards in a card catalog are arranged .70-.83  
 e. according to classification  
 f. according to titles  
 g. chronologically  
 h. alphabetically
33. Readers' Guide is an index to .15-.71  
 a. periodicals of many types  
 b. periodicals one should read  
 c. books one should read  
 d. books in the library



34. A dictionary catalog contains *.50-.98*
- e. author cards
  - f. author and title cards
  - g. author, title, and subject cards
  - h. author cards and analytics
35. One excellent way to show how ideas are related is to *.60-.73*
- a. make an index
  - b. take notes
  - c. construct a bibliography
  - d. make an outline
36. The newspaper article differs from other forms of writing in that it begins with the *.35-.76*
- e. outcome of the action
  - f. time of the action
  - g. details of the action
  - h. place of the action

37. The encyclopedia that contains a complete atlas of the world in the last volume is *.16-.37*
- a. Encyclopaedia Britannica
  - b. The Encyclopedia Americana
  - c. Compton's Pictured Encyclopedia
  - d. The World Book Encyclopedia
38. A reference that features statistics of general interest is *.47-.73*
- e. Hammond's New World Atlas
  - f. The World Almanac
  - g. The World Book Encyclopedia
  - h. Who's Who in America
39. If you wish to study a subject as thoroughly as possible, use *.38-.61*
- a. an encyclopedia
  - b. a dictionary
  - c. a technical book
  - d. a biographical novel
40. You will find collections of biographies marked *.14-.44*
- e. 920
  - f. 922
  - g. 921
  - h. 900

Continue with Part II.

Directions: Read each problem carefully, select the reference that you think will be most likely to contain the desired information, and then mark the answer space corresponding to your choice on the answer sheet. MAKE YOUR MARKS HEAVY AND BLACK. MAKE NO MARKS ON YOUR TEST BOOKLET. Note the way the sample item is marked.

Sample: What is the present address of Walter P. Reuther, labor leader?

e. Readers' Guide

f. Webster's Biographical Dictionary

e f g h

g. Who's Who in America

h. The World Almanac

1. You are trying to avoid needless repetition in an English composition. Which of the following books will help you most? .29-.74
  - a. A book of antonyms
  - b. A book of synonyms
  - c. A book of quotations
  - d. A grammar book
2. You want to know who wrote "Anybody can start anything." .43-.71
  - e. Who's Who
  - f. Julius Caesar by Shakespeare
  - g. The Home Book of Quotations by Stevenson
  - h. Copeland's Treasury for Booklovers
3. You have to write a brief biographical sketch of Aaron Burr. .21-.36
  - a. Who's Who in America
  - b. Dictionary of American Biography
  - c. Webster's Biographical Dictionary
  - d. United States history text
4. What does B.A. mean? .18-.50
  - e. Webster's New International Dictionary
  - f. Webster's Biographical Dictionary
  - g. Crabb's English Synonyms
  - h. Roget's Thesaurus
5. You want to write an authentic history of the improvement of cotton in this country. .69-.69
  - a. Foreign Commerce Yearbook
  - b. Commerce Yearbook
  - c. Yearbook of Agriculture
  - d. Britannica Book of the Year
6. Who wrote The Story of My Life? .37-.75
  - e. Life
  - f. The card catalog
  - g. Who's Who in America
  - h. An encyclopedia
7. Where will you look first for the etymology of the word "acumen"? .28-.55
  - a. A Pronouncing Dictionary of American English
  - b. Picturesque Word Origins
  - c. Crabb's English Synonyms
  - d. Roget's Thesaurus
8. You want to see a sketch of the internal structure of a man's heart. .39-.58
  - e. Webster's New International Dictionary
  - f. Popular Science Monthly
  - g. Hearts Enduring  
(Classification: 822.08)
  - h. Applied Physiology  
(Classification: 613)
9. You are going to participate in a speaking contest and have decided to learn a poem by Longfellow. Where will you look first? .24-.54
  - a. Anthology of American literature
  - b. The Encyclopedia Americana
  - c. The card catalog
  - d. Readers' Guide
10. You are a writer who not only wants variety of words but also exact expression of thought. To which of the following books will you frequently refer? .32-.69
  - e. An encyclopedia
  - f. A thesaurus
  - g. An abridged dictionary
  - h. A grammar book
11. Where will you find the best analysis of the fore-hand drive in tennis? .79-.93
  - a. The Lincoln Library of Essential Information
  - b. Webster's Collegiate Dictionary
  - c. Webster's New International Dictionary
  - d. Official Tennis-Badminton Guide
12. You are writing a review of a book by a newly-recognized author. Which of the following is your best source of information concerning his life? .64-.79
  - e. Webster's Biographical Dictionary
  - f. The Christian Science Monitor
  - g. Current Biography
  - h. Current History
13. Who is the Representative to Congress from your district? .46-.68
  - a. Official Congressional Directory
  - b. Congressional Record
  - c. United States history book
  - d. The card catalog

14. You want to know how many honors George Gallup of Gallup Poll fame has won. *45-66*
  - e. The World Almanac
  - f. The Encyclopedia Americana
  - g. Who's Who in America
  - h. Dictionary of American Biography
15. How do you pronounce "Hagedorn"? *24-29*
  - a. Readers' Guide
  - b. Dictionary of American Biography
  - c. Webster's Biographical Dictionary
  - d. Webster's Collegiate Dictionary
16. You want to know where Bowdoin College is located. *29-54*
  - e. Hammond's New World Atlas
  - f. Official Congressional Directory
  - g. Webster's Collegiate Dictionary
  - h. The World Almanac
17. You want to know where Sinclair Lewis went to school. *35-58*
  - a. Dictionary of American Biography
  - b. The Home Book of Quotations by Stevenson
  - c. Webster's New International Dictionary
  - d. Who's Who in America
18. Where can you find an expression of opinion by an informed commentator on the latest political events in China? *15-16*
  - e. The Christian Science Monitor under EDITORIALS
  - f. The Reader's Digest
  - g. The INTERNATIONAL section of Time
  - h. The Saturday Review of Literature
19. To what source of information would you go in order to find out about the "law of diminishing returns" for an economics lesson? *35-51*
  - a. An encyclopedia
  - b. A textbook
  - c. A dictionary
  - d. An atlas
20. You want to see where the mountain ranges of South America are located. *58-72*
  - e. The World Almanac
  - f. The Columbia Encyclopedia
  - g. Encyclopaedia Britannica World Atlas
  - h. The New International Year Book
21. By using one reference, find the names of five French painters of the nineteenth century. *19-11*
  - a. The World Almanac
  - b. Webster's Biographical Dictionary
  - c. Webster's Collegiate Dictionary
  - d. Who's Who
22. You are asked to trace the development of the magazine in the United States. Where are you most likely to find the necessary information? *33-25*
  - e. Who's Who in America
  - f. Readers' Guide
  - g. Webster's New International Dictionary
  - h. The Encyclopedia Americana
23. You want to know who first invented shorthand as a means of taking notes rapidly. *14-14*
  - a. Who's Who
  - b. The Gregg Writer
  - c. The New Larned History
  - d. Webster's Biographical Dictionary
24. Where will you look to obtain information about the collective farming system in Russia? *14-25*
  - e. Encyclopaedia Britannica
  - f. The Book of Popular Science
  - g. The Agriculture Yearbook
  - h. Our Times by Sullivan
25. You are writing a letter to your Senator in Washington. What salutation should you use? *28-44*
  - a. The World Almanac
  - b. Webster's New International Dictionary
  - c. Official Congressional Directory
  - d. The World Book Encyclopedia
26. Where will you look to find material for a paper entitled "Charles Dickens and His Famous Characters"? *16-21*
  - e. Dictionary of American Biography
  - f. The Encyclopedia Americana
  - g. A Tale of Two Cities by Dickens
  - h. Current Biography
27. When it is 12 o'clock noon, Eastern Standard Time, in the United States, what time is it in Tokyo? *38-65*
  - a. The World Almanac
  - b. Time
  - c. The World Book Encyclopedia
  - d. Encyclopaedia Britannica World Atlas
28. Who was Flora in Roman mythology? *20-50*
  - e. Crabb's English Synonymes
  - f. Webster's Collegiate Dictionary
  - g. Picturesque Word Origins
  - h. The Home Book of Quotations by Stevenson
29. You want to quote from the preamble of the National Constitution of the American Legion. *10-12*
  - a. American Government by Magruder
  - b. The New Larned History
  - c. The Lincoln Library of Essential Information
  - d. The Home Book of Quotations by Stevenson
30. You are looking for the distinction in meaning between "impeach" and "arraign." Which of the following should aid you most? *18-22*
  - e. Crabb's English Synonymes
  - f. Encyclopaedia Britannica
  - g. Webster's New International Dictionary
  - h. Roget's Thesaurus



31. In 1948, Grace Flandrau wrote an article called "Why Don't We Tell Europe Our Story?" In what magazine was this originally published?  
 a. The Reader's Digest .13-.60  
 b. The clipping file  
 c. The card catalog  
 d. Readers' Guide
32. To accompany your unit of reading on colonial literature, you are asked to read generally on the customs of the early colonists. Which reference will be your first choice? .15-.18  
 e. A set of books devoted to history  
 f. An encyclopedia  
 g. A history of Massachusetts  
 h. An unabridged dictionary
33. Give the titles of two of Edna St. Vincent Millay's poems that have been published in magazines. .16-.59  
 a. The Saturday Review of Literature  
 b. An anthology of American verse  
 c. Readers' Guide  
 d. A book of verse by Miss Millay
34. Where will you look to find out how much information your library has to offer on atomic energy? .50-.84  
 e. Index to a textbook  
 f. The library shelves  
 g. The card catalog  
 h. Index to an encyclopedia
35. Clemens, Samuel Langhorne (1835-1910) See TWAIN, MARK .21-.28  
 Which of the following is a wrong interpretation of the index item quoted directly above?  
 a. No material about Samuel Clemens  
 b. Clemens died in 1910.  
 c. Refer to the T's.  
 d. A cross reference
36. In what part of your newspaper will you find an interpretation of the news of the day? .35-.68  
 e. Household page  
 f. Front page  
 g. Society page  
 h. Editorial page
37. You are writing a paper on Clara Barton and desire a few anecdotes to enliven your composition. To which of the following will you turn? .21-.40  
 a. A biographical dictionary  
 b. An encyclopedia  
 c. A history text  
 d. A biography
38. Under which of these classifications would you expect to find a reference book entitled The New Encyclopedia of Music and Musicians? .22-.68  
 e. 500-599  
 f. 700-799  
 g. 600-699  
 h. 000- 99
39. Which reference will tell you how to punctuate the salutation, "Dear Sir," in a business letter? .52-.73  
 a. Readers' Guide  
 b. A yearbook  
 c. A grammar  
 d. The Gregg Writer
40. You are including in a final bibliography the following information: On pages 424-427 in Problems of American Democracy by R. O. Hughes, there is mention of several different types of government. This book was published by Allyn and Bacon in 1935. How will you begin your bibliographical reference? .17-.58  
 e. Problems of American Democracy  
 f. R. O. Hughes  
 g. Hughes, R. O.  
 h. Allyn and Bacon

# AN INVENTORY TEST ON LIBRARY INFORMATION

By Eleanor Gile, Scituate High School

Name \_\_\_\_\_ Age \_\_\_\_\_ Date of testing \_\_\_\_\_

Grade \_\_\_\_\_ Birthdate \_\_\_\_\_

Instructor \_\_\_\_\_

Community \_\_\_\_\_

School \_\_\_\_\_

## Part I

1. a b c d	31. a b c d
2. e f g h	32. e f g h
3. a b c d	33. a b c d
4. c f g h	34. c f g h
5. a b c d	35. a b c d
6. e f g h	36. c f g h
7. a b c d	37. a b c d
8. c f g h	38. e f g h
9. a b c d	39. a b c d
10. e f g h	40. e f g h
11. a b c d	
12. c f g h	
13. a b c d	
14. e f g h	
15. a b c d	
16. e f g h	
17. a b c d	
18. e f g h	
19. a b c d	
20. e f g h	
21. a b c d	
22. c f g h	
23. a b c d	
24. e f g h	
25. a b c d	
26. c f g h	
27. a b c d	
28. e f g h	
29. a b c d	
30. e f g h	

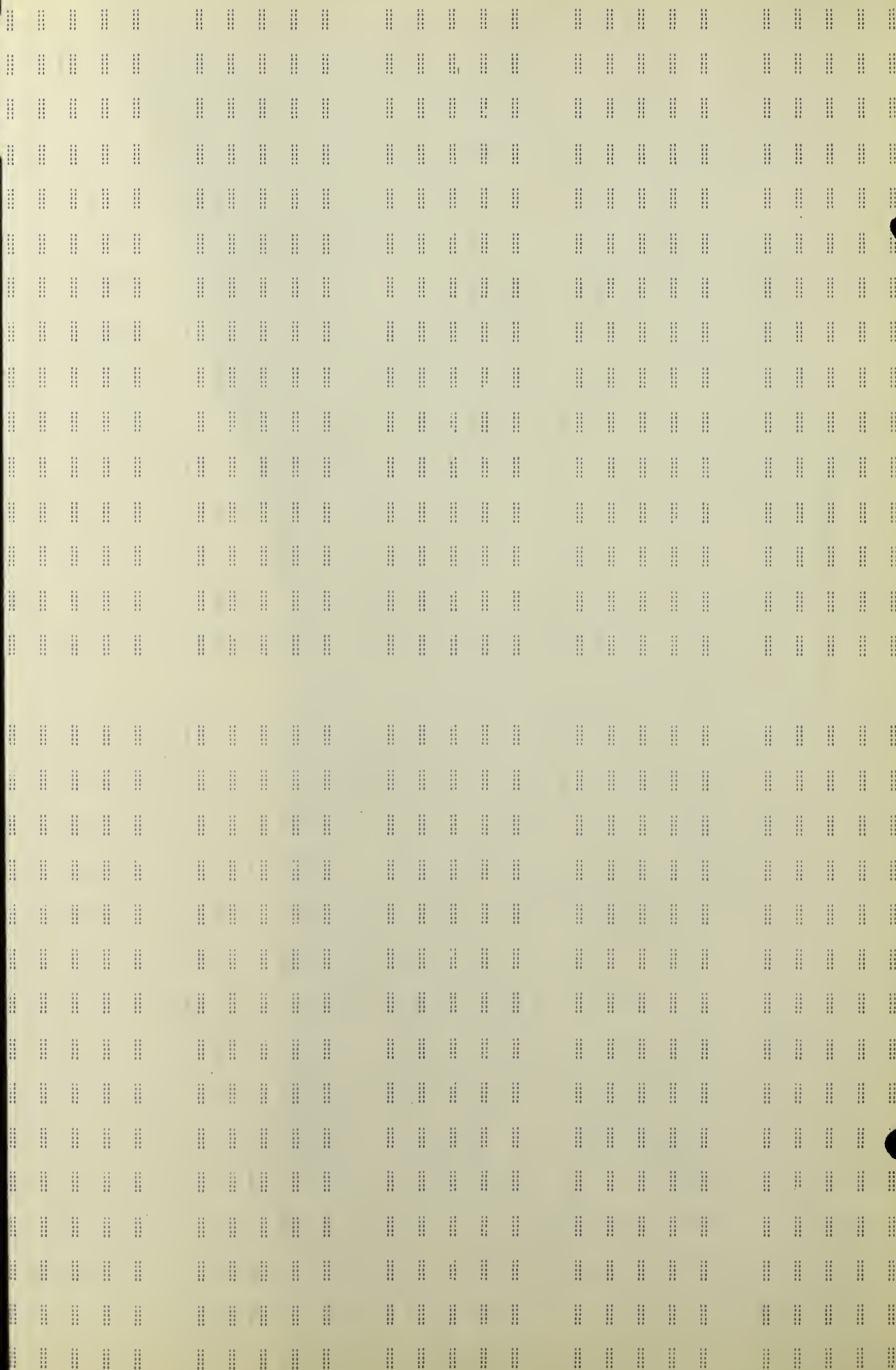
## Part II

1. a b c d	31. a b c d
2. e f g h	32. e f g h
3. a b c d	33. a b c d
4. c f g h	34. c f g h
5. a b c d	35. a b c d
6. e f g h	36. c f g h
7. a b c d	37. a b c d
8. c f g h	38. e f g h
9. a b c d	39. a b c d
10. e f g h	40. e f g h
11. a b c d	
12. c f g h	
13. a b c d	
14. e f g h	
15. a b c d	
16. e f g h	
17. a b c d	
18. e f g h	
19. a b c d	
20. e f g h	
21. a b c d	
22. c f g h	
23. a b c d	
24. e f g h	
25. a b c d	
26. c f g h	
27. a b c d	
28. e f g h	
29. a b c d	
30. e f g h	

## Key

56





Percentile Norms for AN INVENTORY TEST ON LIBRARY INFORMATION  
As a Pre-Test

<u>Raw Score</u>	<u>%-ile</u>	<u>Raw Score</u>	<u>%-ile</u>
55	99.9	16	9
54	99.8	15	7
53	99.7	14	6
52	99.5	13	4
51	99.3	12	3
50	99.2	11	2
49	99	10	1
48	98.3	9	.9
47	98.1	8	.8
46	97.3	7	.7
45	97	6	.5
44	96.5	5	.3
43	95	4	.2
42	94		
41	93		
40	92		
39	90		
38	89		
37	87		
36	84		
35	82		
34	78		
33	75		
32	70		
31	65		
30	60		
29	56		
28	50		
27	45		
26	41		
25	35		
24	33		
23	28		
22	25		
21	20		
20	17		
19	14		
18	12		
17	10		



Percentile Norms for AN INVENTORY TEST ON LIBRARY INFORMATION  
As a Final Test

<u>Raw Score</u>	<u>%-ile</u>	<u>Raw Score</u>	<u>%-ile</u>
73	99.9	34	13
72	99.8	33	12
71	99.7	32	10
70	99.5	31	9
69	99	30	8
68	98	29	7
67	95	28	6
66	92	27	5
65	90	26	4
64	87	25	4
63	85	24	3
62	84	23	2
61	82	22	2
60	80	21	1
59	75	20	1
58	73	19	1
57	70	18	.8
56	68	17	.5
55	65	16	.4
54	60	15	.3
53	59	14	.3
52	55	13	.2
51	53		
50	50		
49	48		
48	45		
47	43		
46	40		
45	37		
44	35		
43	30		
42	28		
41	25		
40	22		
39	20		
38	19		
37	17		
36	15		
35	14		





Advanced assignment: Have students examine texts used in all of their classes and report on the different parts found in each book.

#### LESSON 1

In class introduce the subject of books and their value to the individual. Also stress proper care of books. Talk about their history, their composition, and the use of each part. Spend the major part of the period discussing the various parts of books and specific value of each.

Advanced assignment: Have students learn the meaning and use of each part of a book. If possible, give to each one a list or an outline for a study guide.

#### LESSON 2

Give a brief quiz on parts of books.

Introduce the Dewey Decimal System. Conduct a 10-minute concentration period for students to learn the broad classifications. If language text does not have a section on the Dewey Decimal System, give students outline to follow.

Advanced assignment: Have students review material given in class on the Dewey Decimal System and study any material on this subject in their language texts or in provided outlines. Have students find an example of each broad classification in school library. (Exact title and name of author for each book.)

#### LESSON 3

For review, give a few titles of books to be classified by class.

Introduce the card catalog and its uses.

Advanced assignment: Have students use the card catalog to find out how many references they can find on certain subjects. Teacher may construct a number of specific problems on the use of the catalog.

#### LESSON 4

Pass in papers on use of card catalog.

Discuss encyclopedias and their uses.

Advanced assignment: Have students prepare oral talks on interesting subjects taken from encyclopedias. Have each one pass in a paper on which he has noted title of reference used, publisher, place of publication, copyright, volume, pages read. Teacher may supply a form for required information.

#### LESSON 5

Oral reports on encyclopedia reference work.

Advanced assignment: Have students investigate both abridged and unabridged dictionaries, make lists of all information found.

THE HISTORY OF THE UNITED STATES OF AMERICA

BY JAMES M. SMITH, LL.D., OF THE UNIVERSITY OF CHICAGO

THE HISTORY OF THE UNITED STATES OF AMERICA, FROM THE FIRST SETTLEMENTS TO THE PRESENT TIME. IN TEN VOLUMES. VOL. I.

NEW YORK: PUBLISHED BY J. B. LIPPINCOTT & CO., 15 N. 2ND ST. 1857.

THE HISTORY OF THE UNITED STATES OF AMERICA, FROM THE FIRST SETTLEMENTS TO THE PRESENT TIME. IN TEN VOLUMES. VOL. I.

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## LESSON 6

Discuss the use of dictionaries.  
Give exercise on use of dictionary.

Advanced assignment: Have students review etymology of words, synonyms, antonyms. They should find all references in the library that contain such information. The teacher should either assign exercises in a text or construct a drill of his own.

## LESSON 7

Give a quiz on the different uses of dictionaries and encyclopedias.  
Discuss writing tools: the thesaurus, book of synonyms, book of quotations, etc.

Advanced assignment: Give students an exercise to prepare on use of writing tools.

## LESSON 8

Check exercise on use of writing tools.  
Introduce biographical references.

Encyclopedias, biographical dictionaries (both separate volumes and sections in unabridged dictionaries) Diction-ary of American Biography, Who's Who, Who's Who in America, collective biography, individual biography, Current Biography, biographies in other periodicals, etc.

Advanced assignment: Have students write brief biographical sketches. Have them give usual bibliographical information.

## LESSON 9

Introduce yearbooks -- The World Almanac, government publi-cations, The American Yearbook, The Statesman's Yearbook, yearbooks of encyclopedias, etc.

Advanced assignment: Have students investigate these refer-ences in library. Perhaps have them solve problems constructed by the teacher in order to call their attention to the value of yearbooks.

## LESSON 10

Check students' work on yearbooks.  
Introduce the atlas and any other type of single reference not already mentioned.  
Discuss the possibility of a research paper. Suggest that students find topics particularly interesting to them. Teacher should have suggestions for topics. Introduce carefully at this time different types of reading and manner of taking notes on research reading. It might be helpful to give students out-lines contained in unit. From this point on, the students should be working on this research problem.

Advanced assignment: Have students check locations of all sources of information in school library.





## LESSON 11

Give students a chart of the school library with questions on location of various sources of information.

Refer again to research paper. Discuss research procedure -- uses of different types of books for different purposes.

(See unit.)

Discuss specifically the use of technical reference books and sets of books.

Advanced assignment: Have students list all technical reference books in school library. There may be others in the public library with which they are familiar.

## LESSON 12

Check lists of technical references found by students. Ask them this question: Which references do you think might help you in your present studies? Discussion.

Introduce use of periodicals for reference work.

Advanced assignment: Have students check magazines in school library and at home. What is the purpose of each periodical?

## LESSON 13

Discuss different types of periodicals located by students and any others of importance not mentioned.

Introduce the use of Readers' Guide. The publisher puts out a very handy pamphlet that will help you especially if you do not have Readers' Guide in your library.

Advanced assignment: Give out problems for each individual to solve by using the proper library resources.

## LESSON 14

Discuss problems.

Advanced assignment: Have students work on research papers already assigned.

## LESSON 15

If necessary, continue discussion of assigned problems.

Discuss the uses of bibliographies, both printed ones and the types constructed by individual research workers. Be sure the students know a simple form of bibliography and that they include a bibliography with their research paper.

Advanced assignment: Research paper due.

## LESSON 16

Collect research papers.

Review the unit.

Final administration of AN INVENTORY TEST ON LIBRARY INFORMATION

\* This unit may be either shorter or longer according to the discretion of the teacher. You will notice that several phases of English have been included -- reading, writing, and oral work.



1890

1. The first part of the report deals with the general situation of the country, and the progress of the various branches of industry and commerce. It is found that the country is in a state of general prosperity, and that the various branches of industry and commerce are all making rapid progress.

2. The second part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

3. The third part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

4. The fourth part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

5. The fifth part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

6. The sixth part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

7. The seventh part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

8. The eighth part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

9. The ninth part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

10. The tenth part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all making rapid progress, and that the country is in a state of general prosperity.

A UNIT ON THE USE OF THE LIBRARY

By Eleanor Gile

Scituate High School

To Accompany AN INVENTORY TEST ON

LIBRARY INFORMATION

THE UNIVERSITY OF CHICAGO

LIBRARY

CHICAGO, ILL.

THE UNIVERSITY OF CHICAGO

LIBRARY

## INTRODUCTION

In the following unit, I have endeavored to stress not only all phases of library information but also the skills involved in spite of the fact that AN INVENTORY TEST ON LIBRARY INFORMATION is not intended to measure the latter. In a course on the library, it is difficult to make a division between the two approaches to the study: information concerning the library is of no great value to the student unless he uses its resources skillfully, and basic skills are of little benefit to him without the necessary information. In the test, I have assumed that the student can use the dictionary mechanically well, that he is skilled in the use of the card catalog, that he knows where to look in an encyclopedia in order to solve his research problem, and that he selects, with no hesitancy, the correct volume of a set of reference books by observing its outer label; in other words, I have assumed that the student has mastered certain fundamental skills and is ready to proceed one step further to the actual research work. In the unit I have made no such assumptions.

From my years of teaching experience I have learned that it is always best to approach a subject as if it were entirely new to the individual. If some pupils have background knowledge, so much the better for these individuals. They will be able to progress at an optimum rate of speed and learning. There will be, however, always those who do not know and who need the repetition if such the process be. I have, therefore, built as complete a unit as possible on the use of the library, hoping that both

# REPORT

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teachers and pupils may derive as much value from this project as I have in constructing it and using it with my own pupils. I am sorry that, at this time, I have no test to cover skills in the use of the library except a brief one on the use of guide words, which I am including. Since most English texts now contain some kind of work on the library, they may offer drills which will suffice. The individual teacher will have his own ways of checking the progress of his students before administering, as the final test, AN INVENTORY TEST ON LIBRARY INFORMATION.

The unit which follows is, then, based upon these objectives:

- I. To regard books as essential tools of learning
  - A. To be acquainted with the various parts of a book
  - B. To realize the purpose of each part
- II. To be familiar with the organization of the library
  - A. To have a working knowledge of the Dewey Decimal System
  - B. To be able to use the card catalog skillfully
  - C. To know the location of books on the library shelves
- III. To use reference books efficiently
  - A. To recognize the type suitable to one's problem
  - B. To be able to use each type to advantage
- IV. To realize the value of the magazine as a reference
  - A. To recognize the type of periodical suitable for one's problem
  - B. To know how to use Readers' Guide
- V. To recognize different reading techniques in research
  - A. To read to construct a working bibliography
  - B. To read for references with direct bearing on one's problem
  - C. To read quickly for an over-all picture
  - D. To read for note taking
- VI. To understand the importance of the bibliography
  - A. To be familiar with different forms of bibliographies
  - B. To be able to construct a bibliography
- VII. To use information gained from books and periodicals efficiently
  - A. To be able to take accurate notes
  - B. To be able to make good outlines

As the teacher looks over these objectives, he will observe that, while some are complete in themselves, others head off to other units of work and cannot, in their very nature, be wholly set forth here. For example, Objective V that involves the prin-



ciples of reading can but touch upon a skill that is fundamental in all learning. No more can one, in a unit on the library, hope to teach the rather difficult art of taking good notes and writing workable outlines. Research in the library, nevertheless, requires that the student be aware of these abilities which he should develop by means of careful training and practice throughout his high school years.

The preceding observations lead me to state an obvious conclusion. After the student has had an initial unit on the use of the library at the ninth grade level, his teachers should send him more and more to the library to do research work, for the library is the center of all learning. By putting into practice the information learned in a concentrated course, he will become more and more skillful in locating facts and ideas which his various studies should demand of him in high school. He will be a more efficient student in college which definitely demands a scholarly attitude in the use of the library, and he will be a better citizen in his community which grows only as the education and wisdom of its inhabitants permit.

E.G.

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- I. To regard books as essential tools of learning
    - A. To be acquainted with the various parts of a book
    - B. To realize the purpose of each part
- 

Just as the good cabinet maker shudders at dulling the edge of his saw, so the reader should refrain from defacing the book which is the tool of his profession. It is impossible to expect each and every one to "love" books, but it is not impossible to expect that he treat them with respect. Each library, whether school or public, has its own set of rules to insure its preservation and its value to borrowers. Simple as these statements may seem, every teacher knows it is often more difficult to impress his students with these fundamental truths than to teach them difficult lessons. For this reason, it is important that all instructors, no matter their fields, should cooperate in developing in the individual a proper attitude toward books, our standard tools of learning.

It is also important to inspire as many pupils as possible not only to respect books but also to acquire a genuine liking for them. They are not only tools of learning but also prospective friends. Youth may or may not recognize the value of reading. The individual's attitude, in the beginning, depends a great deal upon his environment, but the school can offer to him untold riches in the field of books if it approaches him in the right manner.

In using the book for research, it is necessary for the student to become acquainted with it in a business way. The book pays dividends to him who knows how to use it efficiently. Each part has its own purpose for being as well as its unique use to the reader. The following outline is arranged to set forth this knowledge in a thorough but concise form.





## A- Parts of a book

## 1. Title page

- a. Location near front of book
- b. Real name or title of book given here
  - 1) In case of difference, this title the one to be used by student, not the one on the cover
  - 2) Title sometimes followed by a subtitle
- c. Author's name given as he desires it
- d. Other information that may be given about the author:
  - 1) Titles of other publications by author
  - 2) Position he holds
  - 3) Degrees or honors he possesses, etc.
- e. Name(s) of editor(s) or compiler(s) given if there is no author
- f. Name of illustrator given if book contains illustrations
- g. Name of translator given if book was not originally in English
- h. Edition statement
  - 1) First printing of a book called "first edition"
  - 2) A printing with changes or corrections called a "revised edition"
  - 3) A printing without changes or corrections called "second" or "third printing" and so on, or "a reprint" (Word "edition" used by some publishers)
  - 4) Latest edition of a book best to use, especially for subjects which call for up-to-date information
- i. Name of series
  - 1) Position sometimes at top of title page
  - 2) Position sometimes on page immediately following title page (Half title)
- j. Place of publication, publisher, and date of publication (Date sometimes omitted)
  - 1) The "imprint"
  - 2) Position at bottom of title page
  - 3) Name of publisher significant in judging value of book (Some publishers known to specialize)

## 2. Copyright date

- a. Location on other side of title page
- b. Recency of information contained in book indicated

## 3. Dedication

- a. Often words of love or gratitude to relatives or friends
- b. Sometimes a statement to show someone respect

## 4. Preface

- a. Purpose of book stated by author, acknowledgment of assistance from others, explanation of methods used in writing book
- b. Preface sometimes written by a friend
- c. Preface important to the reader
- d. Other terms used:
  - 1) Foreword -- not so acceptable now
  - 2) Introduction -- more elaborate or detailed than a preface, usually longer

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is divided into two main sections: the first section deals with the general situation of the country and the progress of the work during the year, and the second section deals with the results of the work during the year.

2. The second part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

3. The third part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

4. The fourth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

5. The fifth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

6. The sixth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

7. The seventh part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

8. The eighth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

9. The ninth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

10. The tenth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

## 5. Table of contents

- a. Position near front of most books
- b. List of parts or chapters with page references
- c. Arrangement chronological not alphabetical
- d. Value noticed in volume of short stories, plays, etc.
- e. Main usefulness -- outline of contents of books
  - 1) Large topics sometimes given
  - 2) Analytical form sometimes used

## 6. Indexes

- a. "The greatest time saver a student has in using books"
- b. Usually an alphabetical list of topics in the book with page references
  - 1) Sometimes a list of sections or paragraphs
  - 2) Names of persons, places, things mentioned in book
- c. Location usually at end of book (Rarely at beginning. Exception: The World Almanac)
- \*d. Key to index necessary to explain symbols, abbreviations, type, etc.
- e. Indexes to sets of books
  - 1) Position varied
    - a) Last volume of Encyclopaedia Britannica
    - b) Back part of each volume of Compton's Pictured Encyclopedia
  - 2) Number of volume usually given first, followed by page number
- f. Special indexes
  - 1) Collections of poetry often with three:
    - a) Index of authors
    - b) " " titles
    - c) " " first lines
  - 2) Anthologies often with two or more
  - 3) Other types of indexes
    - a) Subject indexes
    - b) Indexes of authors, pictures, maps, etc.
- g. Cross references in indexes
  - 1) ex. Farming, see Agriculture  
(Leads reader across to another place in index)
  - 2) ex. Agriculture, see also Fruit culture; Gardening; Soils  
(Leads reader to additional material by cross reference)
- h. Most important material indicated in index
  - 1) Heavy type used for this
  - 2) Asterisk used for this
- i. Abbreviations sometimes used:
  - 1) f -- continued on the following page
  - 2) ff-- " " " " pages
  - 3) sq-- " " " " page
  - 4) sq1- " " " " pages
  - \*5) Any abbreviation used in index explained in its key







## 7. Text

## a. Body of the book

## 1) Division into chapters

- a) Each chapter usually with a heading
- b) Each heading usually found at top of left-hand side of each page
- c) Often left-hand running head a repetition of last paragraph head or chapter division or page

## 2) Sometimes chapters arranged in units

## 8. Footnotes

## a. Reference to important material not in text

- 1) Smaller type
- 2) Numbers or symbols in text referring reader to footnotes

## b. Position at bottom of page

## 9. Illustrations

## a. Valuable aid if properly explained

## b. Types of illustrations

- 1) Photographs, pictures
- 2) Charts
- 3) Tables
- 4) Diagrams
- 5) Maps

## 10. Appendix

## a. Supplementary material to text

- 1) Ex. Lists of Presidents, etc., found in United States history texts
- 2) Ex. Abbreviations, signs, etc., included in dictionaries

## b. Location at the back of the book

## 11. Bibliography

- a. List of books or articles on a particular subject
- b. Purpose sometimes for further study
- c. Purpose sometimes to indicate material used by author for his information

## 12. Glossary and Vocabulary

- a. Small dictionaries in appearance and purpose
- b. Use obvious in books written in foreign languages
- c. An aid to understanding scientific words or any special vocabulary typical of a specific subject

## 13. Purpose of each part

(Explained under A)

NOTE: The instructor may find it helpful to duplicate this outline and those that follow for the pupils' own use.



## SUGGESTIONS:

1. An initial assignment might be to have students examine carefully their own textbooks in order to become acquainted with the different parts of a book and the purpose of each.
2. Be sure that the student understands all terms used in this section. It might be a good dictionary exercise for him to look up the meaning of such words or expressions as: title, subtitle, author, surname, editor, compiler, translator, illustrator, edition, first edition, revised edition, reprint, publisher, imprint, copyright, date of printing, dedication, foreword, introduction, table of contents, analytical table of contents, cross reference, text, chapter, footnote, illustration, chart, table, diagram, map, appendix, bibliography, glossary, vocabulary, gazetteer.
3. The student may be interested to read unusual dedications such as the one found in the Encyclopaedia Britannica.
4. A short research problem might be for the student to look up the history of books or the history of the library in an encyclopedia. There is an especially good article on the library in the World Book Encyclopedia, for example. Whether the report is given orally or in written form, have the student make note of all information that he will need later in constructing a bibliography. This practice will help him form the habit of checking such details. He might pass in the information on a slip similar to the following:

Title of Encyclopedia \_\_\_\_\_

Publisher \_\_\_\_\_

Place of Publication \_\_\_\_\_

Copyright Date \_\_\_\_\_

Volume \_\_\_\_\_

Pages Read \_\_\_\_\_

## Specific topics:

The First Books  
Books in the Middle Ages  
The Art of Book Making  
How Books Are Made Today  
Book Collecting  
The History of the Library  
The Modern Library

1. The first part of the report deals with the general situation of the country and the progress of the work during the year.

2. The second part of the report deals with the results of the work during the year and the progress of the work during the year.

3. The third part of the report deals with the results of the work during the year and the progress of the work during the year.

4. The fourth part of the report deals with the results of the work during the year and the progress of the work during the year.

5. The fifth part of the report deals with the results of the work during the year and the progress of the work during the year.

6. The sixth part of the report deals with the results of the work during the year and the progress of the work during the year.

7. The seventh part of the report deals with the results of the work during the year and the progress of the work during the year.

8. The eighth part of the report deals with the results of the work during the year and the progress of the work during the year.

9. The ninth part of the report deals with the results of the work during the year and the progress of the work during the year.

10. The tenth part of the report deals with the results of the work during the year and the progress of the work during the year.

11. The eleventh part of the report deals with the results of the work during the year and the progress of the work during the year.



(6)

- II. To be familiar with the organization of the library
- A. To have a working knowledge of the Dewey Decimal System
  - B. To be able to use the card catalog skillfully
  - C. To know the location of books on the library shelves
- 

The Dewey Decimal System. Needless to say, the student should not be expected to know the complete scientific Dewey Decimal System of classifying books. More and more, however, English language texts are including the broad classifications which are very easily learned.

These classifications are:

010 - 099	General Works
100 - 199	Philosophy
200 - 299	Religion
300 - 399	Social Sciences
400 - 499	Language and Languages
500 - 599	Science, including Mathematics
600 - 699	Applied Science. Industries.
700 - 799	Fine Arts. Recreation.
800 - 899	Literature
900 - 999	History. Travel. Biography.

There are at least two practical reasons for the student's knowing the above divisions. In using the card catalog, he can tell immediately by the "call number" whether the book catalogued is the type he desires -- biography, fiction, poetry, etc. Secondly, if the student is working in a small library that has open shelves, he may go directly to the section which contains the references he desires. For illustration, he wishes to take out an anthology of English literature and goes immediately to the section marked 800.

At this point, however, the student may be somewhat more efficient if he knows the exact classifications of the books he uses the most. For example, he probably reads biographies for several courses. Most libraries, at the present time, classify



The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity. The second part of the paper is devoted to a discussion of the structure of the atom in the case of a central potential. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

THE STRUCTURE OF THE ATOM

1. The structure of the atom is determined by the laws of quantum mechanics.	2. The laws of quantum mechanics are determined by the laws of the special theory of relativity.
3. The structure of the atom is determined by the laws of quantum mechanics.	4. The laws of quantum mechanics are determined by the laws of the special theory of relativity.
5. The structure of the atom is determined by the laws of quantum mechanics.	6. The laws of quantum mechanics are determined by the laws of the special theory of relativity.
7. The structure of the atom is determined by the laws of quantum mechanics.	8. The laws of quantum mechanics are determined by the laws of the special theory of relativity.
9. The structure of the atom is determined by the laws of quantum mechanics.	10. The laws of quantum mechanics are determined by the laws of the special theory of relativity.

The third part of the paper is devoted to a discussion of the structure of the atom in the case of a non-central potential. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity. The fourth part of the paper is devoted to a discussion of the structure of the atom in the case of a non-central potential. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

The fifth part of the paper is devoted to a discussion of the structure of the atom in the case of a non-central potential. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity. The sixth part of the paper is devoted to a discussion of the structure of the atom in the case of a non-central potential. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

(7)

collective biography, collections of biographical writings that are printed in one book, under 920 and individual biographies under 92, 921, or B. (Example: 920 Modern Biography by Marietta A. Hyde. 921 The Story of My Life by Helen Keller.) Through his English assignments, to give another example, he should be familiar with 811 to indicate American poetry and 821 to indicate English poetry. The first "1" in 811 designates American writing; and the "2" in 821, the English. The idea is carried out in 812 and 822 for drama, 813 and 823 for essays, and so on. Poetry, drama, and essay are all common reading assignments in the literature class.

And so one may continue through the different courses -- English, history, science, economics, art -- to refer to specific classifications that individual pupils need. In the outline that follows are further references, and in the appendix are the "Main Classes of Decimal Classification" as taken from The Library Key by Zaidee Brown. In the appendix also is a rather clever interpretation of the story behind the broad classifications.

In summary, it is advisable that the student learn the broad classifications of the Dewey Decimal System and a few of the more helpful divisions of the system. As he continues to use the library more and more, either he will become familiar with the classification of the books he uses to prepare different research assignments or else he will be able to follow directions in the form of signs or labels -- whatever his library does to assist its users in locating books.

The Card Catalog. The pupil should learn early to use the card catalog, an index to all the books in the library. In small li-

the following conditions: (1) the number of  
 - members of the group must be at least 10;  
 - the group must be organized for the purpose of  
 - the promotion of the general welfare of the community;  
 - the group must be organized for the purpose of  
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the following conditions: (1) the number of  
 - members of the group must be at least 10;  
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 - the promotion of the general welfare of the community;  
 - the group must be organized for the purpose of  
 - the promotion of the general welfare of the community;

braries, catalogs vary. Some have two sets of cards; some, three and occasionally four. Every catalog requires at least two -- the author card and the title card. The ambitious cataloguer includes a third, the subject card, and has what is known as a dictionary catalog, one containing title, author, and subject cards. Cards in any kind of catalog are arranged alphabetically. The fourth type of card and the one entailing the greatest amount of work on the part of the librarian is the analytic card. It is a very helpful type, for it refers the reader immediately to a part or a chapter of a book. For example, it will direct the individual to the very page of a collection of biographies where, perhaps, he may read a brief account of Scott's life and thus gain his information without even using the index of this particular volume.

Examples of the cards mentioned in the preceding paragraph are to be found in the outline that follows as well as other facts and suggestions for the intelligent use of the card catalog. As for the filing arrangement of cards, the instructor should use his own judgment as to the emphasis that he wishes to place upon it. The student does not have to know these details, at this time, in order to meet the requirements in a course on the use of the library.

Location of Books on Shelves. Although this reference is placed last here, it might well be introduced earlier in the unit, for it is essential that student know his library whether it be school or public. The best knowledge of this comes through repeated usage. After he has learned the few facts suggested in the outline, he should go on a tour of investigation. In spite of the explainable shivers of the librarian and his assistants!





## A. The Dewey Decimal System

### 1. General organization

- a. A certain number for each subject
  - 1) All books on this subject marked with this number and kept together on library shelves
  - 2) This number called the "class number"
  - 3) Ex. 800-899 -- class number for literature
- b. Ten main groups -- 10-999
  - 1) Each hundred a main topic
    - a) 010 - 099 General Works
    - b) 100 - 199 Philosophy
    - c) 200 - 299 Religion
    - d) 300 - 399 Social Sciences
    - e) 400 - 499 Language and Languages
    - f) 500 - 599 Science, including Mathematics
    - g) 600 - 699 Applied Science. Industries.
    - h) 700 - 799 Fine Arts. Recreation.
    - i) 800 - 899 Literature
    - j) 900 - 999 History. Travel. Biography.
  - 2) Each hundred divided and subdivided into smaller class numbers
    - a) Ex. 942 -- a book on English history
 

9	indicates history
4	" Europe
2	" England
    - b) Ex. Still further divisions
 

973.3	American Revolution
973.31	Political history; causes, results
973.311	Causes
973.3111	Stamp Act in 1765
973.3112	Navigation Acts
973.3113	Boston Massacre

(And so on.)

### 2. Memory aids (Brown - p. 4-5)

- a. In each hundred, the first nine numbers are for general books on the main topic, and these numbers have similar meanings.
 

Ex. 701	Philosophy of art	801	Philosophy of literature
704	Essays on art	804	Essays on literature
709	History of art	809	History of literature
- b. The meaning of the figures 01-09 in each hundred is as follows:
 

01	Philosophy of	-----
02	Outlines of	-----
03	Dictionaries of	-----
04	Essays on	-----
05	Magazines about	-----
06	Societies connected with	-----
07	Education in	-----
08	Collections on	-----
09	History of	-----
- c. In classes 810-890, the third figure in the number for each literature has a similar meaning.



- 1 Poetry
- 2 Plays
- 3 Essays
- 7 Humor

d. In classes 913-919, travel and description, the third figure is the same as the second figure in the history number.

- 1) Ex. 940 Europe. History
  - 942 England. History
  - 914 Europe. Travel
  - 914.2 England. Travel.

2) The travel number for a country may be formed from the history number by inserting 1 after the 9.

## B. The card catalog

### 1. Purpose

- a. Location of books in the library indicated
- b. An index to the library

### 2. Description

#### a. Series of cards

- 1) Title, author, and classification on each card
- 2) Additional information preferable
  - a) Imprint
  - b) Edition
  - c) Number of pages
  - d) Indication of illustrations, etc.

#### 3) Printed cards

- a) Library of Congress cards (detailed)
- b) Wilson Library cards (also detailed)

#### b. Arrangement alphabetical

3. Types of cards (Libraries differ slightly in forms of cards. The following illustrations are examples of very simple ones.)

#### a. Author cards

- 1) Author's name first
- 2) Title below
- 3) Classification in upper left corner

920	Hyde, Marietta A.
H11	Modern Biography

#### b. Title cards

- 1) Title first
- 2) Author's name below
- 3) Classification in upper left corner

920	Modern Biography
H11	Hyde, Marietta A.





## c. Subject cards

- 1) Subject first
- 2) Author's name
- 3) Title
- 4) Classification in upper left corner

920	BIOGRAPHY -- COLLECTIVE
H11	Hyde, Marietta A. Modern Biography

## d. Analytic cards

- 1) Cards for parts of a book
- 2) Individual references indicated in collections of
  - a) Plays
  - b) Short stories
  - c) Biographies, etc.

920	EDITORS
H11	Hyde, Marietta A. Modern Biography
	Senior Year at Knox College (S.S. McClure. My Biography.) p. 15-23.

## e. More detailed card that is preferable if time of school librarian permits

- 1) Author's name
- 2) Title
- 3) Classification
- 4) Imprint, edition, number of pages

920	Hyde, Marietta A.
H11	Modern Biography. N.Y., Harcourt, Brace & Co., 1934. 277 p.

## f. Dictionary catalog

- 1) Author, title, and subject cards included
- 2) Arrangement alphabetical

## 4. Helps in locating cards in catalog

## a. Guide cards

- 1) Subjects, etc., indicated
- 2) Ex. AFRICA, BIOGRAPHY, etc.

## b. Labels

- 1) Location on front of each drawer
- 2) Single letters of alphabet used in short catalog --  
A,B,C, etc.



- 3) Combinations used in long catalog, found in larger libraries
  - A-And
  - ANE -AUS
  - AUT - BIS
- c. Cross references
  - 1) Position at top of card
    - Farming, see Agriculture
    - Twain, Mark, pseud., see Clemens, Samuel Langhorne
  - 2) "See also" references for additional information
5. Arrangement of cards in catalog (Examples from Brown, pp. 30-31.)
  - a. Arrangement alphabetical
  - b. Books by a person before books written about him
    - Dickens, Charles. American Notes
    - Dickens, Charles. Tale of Two Cities
    - Dickens, Charles. (As the subject of a book)
  - c. "A," "An," and "The" (As first words in title) disregarded
  - \*d. Prefixes in foreign names (de, van, von) following name
  - \*e. Mc regarded as Mac
    - McArthur
    - Macauley
    - McAuley
  - f. Kings, saints, popes called by first names
    - George, Saint
    - George I, King of Greece
  - g. Saints, popes, kings and other people of same name filed in said order
    - George, Saint
    - George II, King of Great Britain
    - George III, King of Great Britain
    - George I, King of Greece
    - George, Albert
    - George, Walter Carl
  - h. "Short before long"
    - Camp and Trail
    - Camp Venture
    - Campaigns of the Civil War
    - Campbell, Harry
  - i. Abbreviations arranged as if spelled in full
  - j. Names of persons, places, then titles of books the order when same names are used for each
    - Washington, Booker T.
    - Washington, George
    - Washington, D.C.
    - Washington, Mass.
    - Washington at Valley Forge

NOTE: Although it is customary in public libraries to capitalize only the first word of a title on a card, the writer follows regular composition procedure in order not to confuse pupils and make them more careless in their written work.





## 2. Location of books on the library shelves

1. All books on one subject kept together
  - a. Arrangement alphabetical according to author in fiction;  
according to call number in non-fiction

- 1) Exception

- a) Arrangement of individual biographies  
alphabetical according to subject
    - b) Ex. 921 A Biography of Shakespeare

3

- b. Fiction usually kept separate from reference books

- 1) Author number possible but generally no Dewey  
classification number
    - 2) Short story collections by same author put in  
with fiction (According to present authorities)
    - 3) Collections by several authors marked SC and placed  
near fiction in many libraries

2. Related subjects kept near each other

3. Call number

- a. Composition

- 1) Class number (500, 920, etc.)
    - 2) Book number
      - a) Author's initial
      - b) Author's number, taken from the Cutter tables
      - c) C37 -- a book by Chapman

- b. Illustration of a call number

- 973 -- U.S. History
    - C37 -- by Chapman

- c. Purpose

- 1) Aid to arrangement of books alphabetically on  
library shelves
    - 2) Aid to finding a book in library
    - 3) Aid to obtaining a book in library (If stacks  
are closed)



## SUGGESTIONS:

1. Give the class ten minutes to concentrate on the ten broad classifications used in the Dewey Decimal System and then have them write these from memory. A surprising number of papers will be perfect or contain very few errors. The pupils retain this information fairly well over a period of time.
2. There is a good explanation of the Dewey Decimal System in Gaining Language Skills by Chapman, Teuscher, and Cook. Other new language texts very likely have similar information.
3. Make out a list of books whose titles indicate easily their substance and have the pupils try to classify them.
4. Have the student always note the classification of a book as indicated in the "call number" when he uses the card catalog.
5. Send the students to the card catalog to make note of all the references the library has to offer on a certain subject.
6. Have the pupils become thoroughly familiar with their school library. Then give them an exercise similar to the one used at Scituate High School. (You will find a copy of this in the appendix.)
7. Have the pupil find a book in his school library to illustrate each of the ten broad classifications. See that he notes the "call number" of each as well as the exact title, name of author, publisher, place of publication, and copyright date. This procedure is a means of acquainting him with the library and serves also as a review of the different parts of books.



1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is divided into two main sections: the first section deals with the general situation of the country and the progress of the work during the year, and the second section deals with the results of the work during the year.

2. The second part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

3. The third part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

4. The fourth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

5. The fifth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

6. The sixth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

7. The seventh part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

8. The eighth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

9. The ninth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

10. The tenth part of the report deals with the results of the work during the year. It is divided into two main sections: the first section deals with the results of the work during the year, and the second section deals with the results of the work during the year.

## III. To use reference books efficiently

- A. To recognize the type suitable for one's problem
  - B. To be able to use each type to advantage
- 

In the outline that follows there are several leads to acquaintanceship with outstanding reference books. First there is a rather detailed explanation of the many uses of the dictionary which may be supplemented by drills found in any language text. Next, the value of the encyclopedia is pointed out as well as the distinctive features of some of the best known sets. For example, Compton's Pictured Encyclopedia will appeal to the slow readers, The World Book Encyclopedia to the average, and The Encyclopedia Americana and Encyclopaedia Britannica to the better-than-average reader. Also mentioned is the one-volume encyclopedia found so often in the home. Although it is not necessary that the student learn all the physical features of the unabridged dictionary or of the various types of encyclopedias, he should have a thorough understanding of the use of each and of its corresponding value.

At this point the student should be given practice in finding a word quickly in the dictionary by having him follow the guide words at the top of each page. He should also be given a lesson on the importance and use of the index found in the encyclopedia or in any other set of books, for that matter. Finally he should know how to use efficiently the guide words placed on the outside of each volume.

After the pupil has mastered the use of the encyclopedia, he should realize that such a reference is a general one, that there are many books written for specific purposes such as the atlas and



gazetteer, yearbooks of all kinds with special emphasis placed upon the World Almanac, also biographical references like the Dictionary of American Biography, Webster's Biographical Dictionary, etc. It is important that he know when and how to use writing tools such as books of synonyms and antonyms, and Roget's Thesaurus. He should also investigate the book of quotations. And finally, stress should be placed upon the fact that there are sets of books that deal, in detail, with one subject as does the New Larned History or The Book of Popular Science.

The outline concludes with aids for the efficient use of reference books as quoted from The Library Key by Zaidée Brown (p.56), and with a list of reference books grouped to indicate their use in obtaining different types of information.

The instructor should give the student as much practice as possible by sending him repeatedly to the library with research problems that will force him to locate and to use the reference books there.





## 1. Dictionaries

### 1.1 Unabridged

#### 1) Two widely used dictionaries

- a) Webster's New International Dictionary
- b) New Standard Dictionary - Funk and Wagnell

#### 2) Information concerning the unabridged dictionary

Webster's New International Dictionary as the reference

##### a) Arrangement

- (1) Guide to pronunciation
- (2) Explanations of abbreviations used in dictionary; also other explanations
- (3) History of English language
- (4) DICTIONARY OF WORDS
- (5) Meanings of abbreviations commonly used
- (6) Explanation of signs and symbols
- (7) Pronunciation of foreign names
- (8) Gazetteer or geographical dictionary
- (9) Biographical dictionary

##### b) Information on words

- (1) Spelling
- (2) Pronunciation and accent
- (3) Division into syllables
- (4) Part of speech
- (5) Inflection
- (6) Derivation or etymology
- (7) Definitions of various meanings
- (8) Examples written in italics
- (9) Standing of a word, or of a certain definition

##### c) Variety of information (Brown, p. 38)

- (1) Persons: pronunciation of name, dates of birth and death, main activity.
- (2) Legendary and imaginary persons, such as characters in books: brief explanation.
- (3) Personal names, such as Albert or Beatrice: meaning.
- (4) Places: pronunciation, location, population of cities.
- (5) Pictures and diagrams: a great variety, sometimes near the word illustrated, sometimes in groups.
- (6) Abbreviations: explained.
- (7) Foreign phrases: pronunciation and meaning.
- (8) Arbitrary signs, such as those used in printing or in mathematics.
- (9) Odd phrases, such as "walk the chalk," "walk the plank": explanation under the first important word.
- (10) Noun phrases, such as "Black Horse Cavalry": explained.
- (11) History of English language: at front of dictionary
- (12) Pronunciation and spelling: a general discussion usually at the beginning.
- (13) Synonyms, other words of familiar meaning.

2017

In some cases, differences in meaning are explained

d. Useful in all subjects

(1) Fine Arts

- (a) Biographical dictionary
- (b) Words
- (c) Illustrations

(2) Composition, Grammar

(3) Literature, history, trade courses, government, civics, physics

- (a) Biographical section
- (b) Proper names in dictionary proper
- (c) Definitions

(4) Mathematics, biology, music, chemistry

- (a) Definitions
- (b) Geographical section
- (c) Symbols

(5) Geography

- (a) Gazetteer
- (b) Flag plates, etc.
- (c) Words
- (d) Seven Wonders of the World (p. 2495)

(6) Business course

- (a) Words
- (b) Titles, forms of address

b. Abridged dictionaries

- 1) Shortened forms
- 2) Amount and detail of information depending upon size of book

c. Aids in using a dictionary

- 1) Thumb index
- 2) Guide words at top of page
- 3) Cross references

2. The encyclopedia

a. Value to the student

- 1) Excellent introduction to a subject or topic
  - a) Concise, over-all picture given, often well illustrated
  - b) More detailed information indicated for further research

2) Articles written by authorities

3) Information kept up to date by several methods

- a) New editions
- b) Year books
- c) Supplements

b. Value to the average reader -- student or adult

- 1) Means of self-education
- 2) Easily available information for club or study group

c. Two types of encyclopedias according to arrangement

1. Dictionary type

- a) All topics arranged alphabetically
- b) No index required
- c) Cross references included
- d) Examples

(1) The Concise Encyclopedia Americana

(2) The New International Encyclopedia





(5) The World Book Encyclopedia

## 2) Monographic type

- a) Large topics arranged alphabetically
- b) Small topics not readily found
- c) An index required
- d) Examples:

(1) Encyclopaedia Britannica(2) Compton's Pictured Encyclopedia

## d. Distinctive features of some of the best encyclopedias

1) Encyclopaedia Britannica

- a) A reference work for mature readers
- b) Long, scholarly articles
- c) Full, detailed information
- d) Illustrations used moderately
- e) Arrangement monographic
- f) Tendency to be slightly pro-British (American owned)
- g) Volume 24 (last volume in 1943 edition)
  - (1) A complete atlas of the world
  - (2) An index

(a) A gazetteer of the world included

(b) Typical reference to reading material

(A feature of the Britannica):

Flower 9 - 408a

a	c
b	d

Flower - the subject

9 - the volume

408 - the page

a - the first quartile

(Each page considered divided into four equal parts)

h. Annual supplement: Britannica Book of the Year

- (1) Current calendar included
- (2) Calendar of events of previous year
- (3) Current record of events of importance of the year
- (4) Arrangement alphabetical
- (5) Index
  - (a) Material in volume indexed
  - (b) Material in previous yearbooks indexed

2) Encyclopedia Americana

- a) Excellent American encyclopedia
- b) Scientific articles outstanding
- c) Technology, government, and business stressed
- d) Special features
  - (1) Histories of centuries under their names
  - (2) Summaries of famous books under their titles
  - (3) Biographies of living people
- e) Articles signed by specialists
- f) Numerous short articles
- g) Dictionary type of arrangement
- h) Illustrations moderately use (Some colored plates in 1948 edition)
- i) Annual supplement: Americana Annual



### 3) New International Encyclopedia

- a) Excellent encyclopedia for quick reference
- b) Biographies well written
- c) Articles reliable, written by specialists
- d) Many cross references - no index
- e) Dictionary type of reference
- f) Illustrations good
- g) Annual supplement - New International Year Book

### 4) World Book Encyclopedia

- a) Good reference for average reader
- b) Articles reliable
- c) Illustrations numerous
- d) Many visual aids
- e) Numerous colored plates
- f) Dictionary type
- g) Reading and Study Guide
  - (1) Last volume
  - (2) Excellent outlines of study for United States history, civics, general science, literature, and biography
- h) Annual supplement: World Book Annual Supplement

### 5) Compton's Pictured Encyclopedia

- a) Good reference for young reader
- b) Revisions frequent
- c) Illustrations numerous
- d) Outlines given at end of many articles with page references to sub-topics
- e) Index found throughout
- f) Bibliographies after main topics, graded by age

### e. The one-volume encyclopedia

#### 1) Lincoln Library of Essential Information

- a) A good quick reference
- b) Many tables, outlines, and lists included
- c) Arrangement monographic
- d) Index full, easily used
- e) Revisions frequent
- f) Many facts included

#### 2) Columbia Encyclopedia

- a) A volume compiled and edited at Columbia University
- b) Much information in a small space

### f. The atlas and gazetteer

#### a. Atlas

##### 1) Maps

- a) Table of contents to be used first
- b) Index of value also

##### 2) Areas of countries, states, nations

##### 3) Populations

##### 4) Other statistical information

##### 5) Examples of atlases

- a) Rand McNally Commercial Atlas
- b) Encyclopaedia Britannica World Atlas
- c) Hammond's New World Atlas

#### b. Gazetteer

##### 1) A geographical dictionary

##### 2) Examples

- a) References to maps in Index of the Encyclopaedia Britannica





- b) Lippincott's Gazetteer
- c) One in Webster's New International Dictionary

#### 4. Annals

##### a. Yearbooks

- 1) Yearbooks to encyclopedias  
(Already described under "Encyclopedias")
- 2) American Yearbook
  - a) Current events
  - b) Progress of year in science, art, literature, etc., in the United States
- 3) Statesman's Yearbook
  - a) References to countries of the world
  - b) Publication in England
  - c) Facts about government of each country
  - d) Descriptive information
  - e) Statistics
  - f) Countries of British empire given first
- 4) Government publications
  - a) Agriculture Yearbook
  - b) Commerce Yearbook
  - c) Foreign Commerce Yearbook
  - d) Official Congressional Directory
  - e) Various pamphlets, etc.
  - f) State publications (Such as Manual of the General Court of Massachusetts)

##### b. World Almanac

- 1) Very useful book
- 2) Many subjects covered
- 3) Varied information
- 4) Many statistics
- 5) Index in front of book

##### c. Statistical Abstract of the U.S.

- 1) Figures of all kinds concerning the U.S.
- 2) Useful book

#### 5. Biographical references

##### a. Dictionary of American Biography

- 1) Biographies arranged alphabetically
- 2) No biographies of living persons
- 3) Information accurate and reliable

##### b. Dictionary of National Biography

- 1) A set similar to Dictionary of American Biography
- 2) Other nationalities included

##### c. Webster's Biographical Dictionary

##### d. Current Biography

- 1) A monthly
- 2) Individual copies combined in annual volumes
- 3) A periodical indexed in Readers' Guide

##### e. Who's Who

- 1) Lives of living people
- 2) A reference mainly of people in Great Britain

##### f. Who's Who in America

- 1) Lives of living Americans
- 2) A publication every other year

##### g. Individual biographies

##### h. Collective biography

#### 6. Tools for writing and speaking English

##### a. Dictionaries



- b. Webb's English Synonyms (Or any other book of synonyms)
- c. Roget's Thesaurus
- d. Texts on writing and speaking English

#### 7. Quotations

- a. Familiar Quotations by Bartlett
- b. The Home Book of Quotations, Classical and Modern by Stevenson

#### 8. Mythology

- a. Bulfinch's Book of Myths
- b. Gayley's Classic Myths

#### 9. Anthologies

- a. Various collections of writings
- b. Many different authors

#### 10. Indexes

- a. Books indicated that reader wants for the literature he is investigating
- b. Indexes available for locating
  - 1) Poetry
  - 2) Songs
  - 3) Fairy tales, myths, legends
  - 4) Essays
  - 5) Plays
  - 6) Short stories
  - 7) Debates
- c. Specific example: Granger's Index to Poetry
- d. Readers' Guide
  - 1) Index to periodicals
  - 2) Discussion found in separate part of unit

#### 11. Useful sets of books for definite subjects

- a. English
  - 1) Copeland's Treasury for Booklovers
  - 2) Dictionary of American Biography  
(Useful for many subjects)
  - 3) The Voice of America (Orations)
- b. Travel
  - 1) John L. Stoddard's Lectures
- c. History and Social Studies
  - 1) Building America
  - 2) Commonwealth History of Massachusetts
  - 3) Chronicles of America Series
  - 4) Dictionary of American History
  - 5) Gibbon's Roman Empire
  - 6) The March of Democracy
  - 7) Nations of the World
  - 8) The New Larned History
  - 9) Our Times
  - 10) The Stream of History
  - 11) Universal World History
  - 12) Wonders of the Past
  - 13) The World's Great Events
  - 14) The World Story
- d. Commercial Law
  - 1) Business Man's Commercial Law Library
- e. Aeronautics
  - 1) Aviation
- f. Science
  - 1) The Book of Popular Science





## B. Aids to efficient use of reference books

### 1. General steps to observe in looking up information (Brown, p.55)

- a. Use first a general encyclopedia, selecting the one adapted to your need, considering its date, fullness of treatment and other points.
- b. Look in encyclopedias and reference books devoted to the field in which your topic lies.
- c. For certain topics, it is well to use annuals, as these give recent facts, and supplement the encyclopedias.
- d. Look in the card catalog. If there is little or nothing under your subject, think of a broader subject that might include it. If you have access to library shelves, look in indexes of books on the broad subject that may include your topic. For example, for some man living in the Middle Ages, search indexes of books on the Middle Ages.
- e. Look in the indexes to magazines, choosing first the one most likely to meet your need.
- f. To find parts of books (analytics) on your subject, look in the indexes to printed catalogs and in Essay Index.
- g. Look in the vertical files of pamphlets, clippings, and pictures, if such files are in your library.

### 2. Reference books for different types of information (Brown, pp.56-57)

- a. Real persons
  - 1) Current Biography
  - 2) Who's Who
  - 3) Who's Who in America
  - 4) Also magazines
- b. Historic characters
  - 1) Dictionary
  - 2) Webster's Biographical Dictionary
  - 3) Columbia Encyclopedia
  - 4) Classical dictionaries
  - 5) General encyclopedias
  - 6) Some reference books devoted to one subject
  - 7) Collective biography
- c. Imaginary persons
  - 1) Briefly in dictionary
  - 2) Century Cyclopaedia of Names
  - 3) Handbooks, such as Brewer's
  - 4) Books on mythology
  - 5) Encyclopedias
  - 6) Classical dictionaries
- d. Places
  - 1) Gazetteers
  - 2) Atlases
  - 3) The dictionary
  - 4) The encyclopedia
  - 5) Books of travel
  - 6) Guide books
- e. Statistics
  - 1) Statistical Abstract of the U.S.
  - 2) Yearbooks
  - 3) Encyclopedias
  - 4) Reference books on special topics
  - 5) Magazine indexes



## f. Current events

- 1) Yearbooks
- 2) Almanacs
- 3) Magazines
- 4) Newspapers
- 5) Indexes
- 6) Pamphlet file

## g. Pronunciation

- 1) Dictionary
- 2) Century Cyclopaedia of Names
- 3) Lippincott's Biographical Dictionary
- 4) Lippincott's Gazetteer
- 5) Webster's Biographical Dictionary
- 6) Some encyclopedias

## 3. Locating material in encyclopedias by volumes

## a. Split letter encyclopedia arrangement

A to BEARLE Vol. I	BEAN to CHALIAPIN Vol. II	CHALK to DINOSAURIA Vol. III
-----------------------------	------------------------------------	---------------------------------------

## b. Unit letter encyclopedia arrangement

A Vol. I	B Vol. II	C Vol. III
-------------	--------------	---------------

## c. Words sometimes used instead of letters

4. Use of indexes in reference books
  - a. Explicit directions given in each reference book
  - b. An important aid to the student
  - c. Thumb index found in some dictionaries
5. Use of guide words in dictionaries
  - a. Location at top of page
  - b. Advantage to research worker





## SUGGESTIONS:

1. An excellent aid to teaching the use of the encyclopedia is a little paper-covered exercise book, entitled The Look-It-Up Book, that one can buy from the Quarrie Corporation for five cents. It contains explanations and drills on (1) How an encyclopedia is arranged, (2) The purpose of an encyclopedia, (3) How to find facts in an encyclopedia, (4) How to use cross-references and sub-topics, (5) How to use related subjects, (6) How to read maps, and (7) How to use any encyclopedia in preparing home-work.
2. A popular way of giving practice to the student in the use of guide words is to make a drawing of the backs of several volumes in a set and then ask which one contains certain items of information.

Ill.

A	B	C	D	E
---	---	---	---	---

In which volume will you look to find the answer to the following questions?

1. When was the Battle of Bunker Hill fought?
2. Describe the Parthenon, a famous temple in Athens and a fine example of Greek architecture.
3. If you are discarding an old unabridged dictionary, tear out enough pages for your students who may study these "samples" and thus save wear and tear on your new copy.
4. The G. & C. Merriam Co. will send, upon request, a booklet entitled How to Use Webster's New International Dictionary. They will also supply other aids on the use of the dictionary.
5. The instructor should have as many illustrations of the common references in the classroom as he can when he makes his assignments. It is well, at first, to examine with the students the book of synonyms, the thesaurus, the biographical dictionary, The World Almanac, an index to any set of encyclopedias, Who's Who in America, the atlas -- any reference which he thinks is new to the majority of his students. Remember that many of these reference aids are new to the pupils and that some are harder to master than others. They must first be thoroughly familiar with the composition of each before they can use these books efficiently. Do not take it for granted that they know too much about any of them. The writer has known seniors from high school to go to the public library and ask the librarian how to find information in an encyclopedia which should be a reference



familiar to every individual from the junior high level on!

6. Have the students compare a book of synonyms with Roget's Thesaurus. Give them exercises in each.
7. Most pupils enjoy looking up the etymology of words. An interesting book on this subject is Word Origins, published by G. & C. Merriam Co.
8. Make up a list of problems and send the class to the library to locate the best references for their solving. Be sure the students note exact reference title, along with the name of the author, editor, imprint, copyright, volume, and page(s).

Examples:

1. What type of literature does Hermann Hagedorn write?
  2. How many Confederate soldiers lost their lives in the Civil War?
  3. Describe the manner of farming employed by the Saxons in the sixteenth century.
  4. Where will you find suggestions for a class motto?
9. Use research problems for oral talks or for the basis of term papers, or as background information for the current literature assignment. This unit on the use of the library is intended to be correlated with all phases of English and not to be just an isolated course.

NOTE: Many publishers of outstanding reference books will send the school free material on the use of their publications. These aids often prove very helpful, especially when you ask many students to become acquainted with one copy or with one set of books at the same time.



# THE HISTORY OF THE UNITED STATES

The first part of the history of the United States is the period from the discovery of the continent by Christopher Columbus in 1492 to the establishment of the first permanent settlements. This period is characterized by the exploration of the continent by Spanish, French, and English explorers, and the establishment of the first permanent settlements by the English in 1607.

The second part of the history of the United States is the period from the establishment of the first permanent settlements to the American Revolution in 1776. This period is characterized by the growth of the colonies, the struggle for independence from Britain, and the establishment of the United States as a new nation.

The third part of the history of the United States is the period from the American Revolution to the present. This period is characterized by the growth of the United States as a world power, the Civil War, and the struggle for civil rights.

- IV. To realize the value of the magazine as a reference
- A. To recognize the type of periodical suitable for one's problem
  - B. To know how to use Readers' Guide
- 

The periodical is just as valuable in reference work as the book; in certain types of research, more valuable in that it very often contains material found in no other place. And yet, there seems to be a decided lack of information in respect to the value and use of the magazine in many secondary schools.

There are several apparent reasons for this neglect. In the first place, the small library has little or no room for accumulations of bound periodicals. In the second place, a magazine disappears more easily than any other reference in the library. Thirdly, so little use is made of the magazine by different subject teachers on the high school level that it is often considered inadvisable to spend the money for these rather expensive sources of information.

These difficulties may, however, be overcome in varying degrees. Shelf space may be eked out here and there for periodicals even if the arrangement is not ideal. Students may be influenced to develop a better civic attitude in respect to the borrowing of magazines. Most important of all, the subject teacher can use this kind of reference to a greater extent in his classes.

There are at least two decided benefits that the student may derive from instruction in the use of periodicals. College will demand that he know how to use periodicals skillfully in order to solve the research problems posed in many of his courses. Life



will demand that he read the better magazine rather than the pulp editions that tend to drag the individual down to lower levels of reasoning and of thinking. There are too many people in the country today who understand such publications as True Confessions and the comics better than they do The Atlantic or even The Saturday Evening Post. Perhaps the development of better taste in reading periodicals will help to decrease the large number of sixth grade adult readers that we have in the United States at present.

One cannot mention periodicals for research without referring to Readers' Guide, important because it is an index to all the outstanding magazines. An Abridged Readers' Guide has been issued fairly recently for the use of small libraries. As everyone knows, it is impractical to do reference work in periodicals without this special index. Imagine the time expended if one had to thumb his way through dozens of magazines in order to find out whether he wanted to read one article!

For suggestions on how to become acquainted with Readers' Guide, the writer refers you to a pamphlet published by The H.W. Wilson Company which is entitled "How to Use the Readers' Guide." It is possible to obtain these pamphlets in quantity from the company.





## Periodicals

### 1. Value of Magazines

- a. Latest information on many subjects
  - 1) Hobbies, biography, travel, art, science, etc.
  - 2) Much information published first in magazines
  - 3) Some information often found only in this form
- b. Short stories, poems, essays, etc.

### 2. Examples of a few well-known periodicals

- a. The American Magazine - "Success stories" about real people a specialty
- b. The Atlantic - High literary standing
- c. Collier's - Popular weekly
- d. Current History - Strictly non-partisan
- e. Good Housekeeping - Household magazine
- f. Harper's Magazine - Topics of current importance a specialty
- g. Hygeia - Health and hygiene
- h. The National Geographic Magazine - Beautifully illustrated
- i. Popular Mechanics - Descriptions of recent inventions and developments
- j. Popular Science Monthly - Latest scientific inventions and discoveries
- k. Redic News
- l. Reader's Digest - Condensations and reprints from other magazines
- m. The Saturday Evening Post - Articles on many different phases of American life
- n. The Saturday Review of Literature - A weekly about new books and authors
- o. The Scholastic - A national weekly for high school students
- p. Scribner's Magazine - High standards of literary merit
- q. Time - News events
- r. The Gregg Writer - An aid to the commercial student
- s. The American Observer - Current topics for social studies groups
- t. Many more - "A magazine for every interest"

### 3. Forms of magazines

- a. Separate copies published first
  - 1) Weekly
  - 2) Monthly
  - 3) Quarterly
- b. Copies often bound in volumes for reference work
- c. Index necessary for bound volumes
  - 1) Several well known indexes
  - 2) Readers' Guide most popular one

## 4. Readers' Guide

### 1. Purpose

- a. An index to periodicals
- b. Reader referred to correct volume and page of a particular magazine
- c. Now an index to over 100 most used periodicals

### 2. Form of Readers' Guide

- a. Monthly pamphlet form first
- b. Bound copies issued annually (Annual cumulation)



- c. At intervals, bound numbers combined into larger volumes (Every two to five years)
- d. List of periodical references given in front of book
- e. Alphabetical list of authors and subjects throughout Guide
- f. Articles not usually indexed by their titles
- g. Stories - full entry under author; reference made to author entry from title of story
- h. Plays - full entry under author; listed under title with the heading "Dramas --"
- i. Moving pictures - listed under title of picture under heading "Moving picture plays --"
- j. Poems - full entry under author's name; listed by title under heading "Poems"
- k. Cross references throughout the Guide
  - 1) Ill.

#### Zoology

See also Animals; Birds; Fishes; Insects; Mammals; Medical zoology; Zoological gardens

- 2) "See also" - additional material in these other places
- 3) "See" reference - nothing here; look in another place
- l. Abbreviations used freely
  - 1) Explanations clearly stated at front of each number
  - 2) Careful study needed of these by user

#### m. A reference from Readers' Guide

##### ATOMIC research

Atomic power: how? when? H.B. Nichols. 11

C S Mon Mag p3 Ja 4 '47

- 3. Hints on using Readers' Guide (Tressler IV, p. 174-175)
  - a. In looking up a current topic begin with the paper bound numbers of the year and then work backwards through the bound indexes of previous years.
  - b. Find out what current magazines and bound volumes of magazines are in your library and then search for references to them.
  - c. Use your intelligence and imagination in looking under related topics.
  - d. On a slip of paper copy accurately the name of the magazine, the pages, and the date.
  - e. After listing several references, find the articles yourself if you are permitted to go to the magazine shelves; otherwise, hand your slips to a librarian.





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- V. To recognize different reading techniques in research
    - A. To read to construct a working bibliography
    - B. To read for references with direct bearing on one's problem
    - C. To read quickly for an over-all picture
    - D. To read for note taking
- 

It may appear, upon first consideration, that little emphasis is being placed upon this section of the unit because of its brevity. To the contrary, reading is such a tremendous subject that to go into detail would involve another and much longer study. It is such a far-reaching field that it is the basis of practically all of our teaching. Certainly a unit on the use of the library which grows out of the ability to read would be most inadequate without reference to this fundamental skill.

Mentioned here are reading techniques, the knowledge and use of which, will enable the individual to use library sources more skillfully and efficiently. These are: (1) the technique of reading to construct a working bibliography, (2) the technique of reading for references with direct bearing on one's problem, (3) the technique of reading quickly for an over-all picture, and (4) the technique of reading for note taking.

The following outline which explains these techniques may be discussed with the students at this time, but its value lies in its use in actual research work which this unit can but touch upon.

THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY  
530 SOUTH EAST ASIAN AVENUE  
CHICAGO, ILLINOIS 60607-7070  
TEL: 773/936-5000 FAX: 773/936-5001  
WWW: WWW.CHEM.UCHICAGO.EDU

1. The first part of the paper describes the synthesis of the new compound. The reaction of the starting materials was carried out under the following conditions: 100°C, 10 atm, 10 h. The yield of the product was 80%. The molecular weight of the product was determined by mass spectrometry and found to be 1000. The infrared spectrum of the product showed a strong absorption at 1700 cm<sup>-1</sup>, which is characteristic of a carbonyl group. The <sup>1</sup>H NMR spectrum of the product showed a broad peak at 7.5 ppm, which is characteristic of an aromatic proton. The <sup>13</sup>C NMR spectrum of the product showed a peak at 160 ppm, which is characteristic of a carbonyl carbon.

2. The second part of the paper describes the properties of the new compound. The compound was found to be a solid at room temperature. The melting point of the compound was 150°C. The compound was found to be soluble in a variety of solvents, including water, ethanol, and acetone. The compound was found to be stable in air and light. The compound was found to be non-toxic. The compound was found to be a good catalyst for the reaction of the starting materials.

3. The third part of the paper describes the mechanism of the reaction. The reaction was found to proceed via a two-step mechanism. In the first step, the starting materials react to form an intermediate. In the second step, the intermediate reacts to form the product. The rate of the reaction was found to be first order in the starting materials. The activation energy of the reaction was found to be 100 kJ/mol.

- A. Reading to construct a working bibliography
  1. Locate all possible references.
  2. Make out bibliographic cards for each different reference.
- B. Reading to check references for information with direct bearing on one's problem
  1. Know how to use all parts of a book to an advantage.
    - a. Title page
    - b. Preface, foreword, introduction
    - c. Table of contents
    - d. Visual aids: maps, illustrations, charts, diagrams, etc.
    - e. Footnotes
    - f. Index(es)
    - g. Appendices
    - h. Any summaries (Often found at end of each chapter)
  2. Recognize the style of the newspaper article.
    - a. Main idea in the headline
    - b. Most important information first
    - c. Detailed description last.
- C. Reading quickly for an over-all picture or skimming
  1. Keep problem always in mind.
  2. Do not read anything that does not pertain to your problem.
- D. Reading for note taking
  1. Read more slowly.
  2. Read accurately.

NOTE: The above outline was constructed primarily for the student as a means of calling to his attention the different reading techniques used in research. Statements were used at times deliberately to emphasize the procedures.





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- VI. To understand the importance of the bibliography
- A. To be familiar with the different forms of bibliographies
  - B. To be able to construct a bibliography
- 

At this point, it is impossible to do more than to explain the uses and general forms of the bibliography. Later, when students work upon actual problems in research that call for written reports, they will become more familiar with the bibliography from actual practice. It is a difficult procedure to teach young students, principally because they have not developed sufficiently in their thinking and reasoning to benefit personally from it. Gradually, through practice, they become more efficient users of this aid in research. As seniors in high school, for example, they should have a fairly good working experience with the bibliography.

At this point, however, the students should know (1) what a bibliography is, (2) where to find material for a bibliography, (3) what types of bibliographies are used according to their purpose, (4) the information needed to construct a bibliography. They should be able, at least, to list references in bibliographic form: author's (editor's) name first, then title of volume, etc.

The following outline contains more detailed information than one may wish to use at this time. The instructor will perhaps find it helpful for more advanced students.



## A. Different forms of bibliographies

## 1. Definition of a bibliography

- a. "A list of writings related to a given subject or author"
- b. A list of references

## 2. Sources of bibliographies

- a. General reference books  
(Usually further references given at the end of each topic)
- b. Card catalog
- c. Selected lists on all subjects  
Ill. Standard Catalog for High School Libraries
- d. Pamphlet file

## 3. A working bibliography

- a. One in the process of making
- b. Small cards or slips of paper often used
- c. Information included:
  - 1) Classification number
  - 2) Author's name in full, last name first  
(Name of editor, compiler, etc.)
  - 3) Title copied exactly from title page
  - 4) Edition
  - 5) Publisher
  - 6) Place of publication
  - 7) Date of latest copyright
  - 8) Pages read
  - 9) If a reference book from a set, volume and pages
- d. Illustration of a card from a working bibliography:

920	Hyde, Marietta A., ed.
HL1	Modern Biography. Harcourt, Brace & Co., N.Y., 1934.

Senior Year at Knox College  
(My Biography by S.S. McClure)  
p. 15-23.

- e. Other types of references similar to those given for card catalog. (If all of the information listed under c of above is not included on simplified card in catalog, it may be found in reference book itself.)
- f. Cards finally arranged alphabetically by authors
- 4. Finished bibliography
  - a. Information taken from cards of working bibliography
  - b. References listed alphabetically on a sheet of paper and attached to research paper
- 5. Inclusive bibliography
  - a. Printed to aid research worker
  - b. Work of scholars, specialists, book publishers
  - c. Ill. Cumulative Book Index





## 5. Final form of a bibliography

## 1. A book with one author:

Muzzey, David S. A History of Our Country. Ginn & Co., Boston, 1943. p. 515-517.

## 2. A book with two authors:

Ruch, G.M. and Stoddard, G.D. Tests and Measurements in High School Instruction. World Book Company, N.Y., 1927.

## 3. A book with more than two authors:

Ansorge, E.F., Lucas, H.M., and others. Prose and Poetry for Enjoyment. The L.W. Singer Co., N.Y., 1943.

## 4. An article in an encyclopedia or a book without an author:

Encyclopaedia Britannica. 14th ed. 1929. v.15, p. 377-396.  
"Mexico," by C.W. Hackett.

## 5. A part of a book:

Hyde, Marietta A., ed. Modern Biography. Harcourt, Brace & Co., N.Y., 1934. "Senior Year at Knox College" by S.S. McClure, p. 15-23.

## 6. A magazine article:

Basso, Hamilton. "The Roosevelt Legend." The Reader's Digest, p. 55-59. February 1948.

NOTE: Forms of bibliographies differ slightly. The important thing is to be consistent as to position of items and to punctuation.



- VII. To use information gained from books and periodicals efficiently
- A. To be able to take accurate notes
  - B. To be able to make good outlines
- 

It is difficult to know just where to include material on taking notes and making good outlines. Everyone will surely agree that such instruction belongs in a unit like this, but where? It may be that the instructor will wish to include the ideas contained in the following outline earlier in the unit. It may be that the students have already had practice in note taking or in constructing outlines or in both. The reason that the writer has included this material at the end of the unit is because the primary purpose of this entire project is to give the students a concise and concentrated study on the use of the library with the idea that they will continue to use the library more and more. Since most research work is done with the aim of writing papers or giving oral reports, information on taking notes and making outlines appears to be a logical bridge between this introduction to research and the actual experience of working on a real research problem.





## 4. Accurate note taking

## 1. Purpose

- a. Scattered material collected in condensed form for study and reference
- b. A memory aid
- c. Main and subordinate points determined
- d. Information arranged to show relationship of main and subordinate points
  - 1) An outline excellent to show relationship
  - 2) " " a good "organizer"

## 2. Method of keeping notes

- a. Method mainly up to individual
- b. Notes kept preferably on paper or cards large enough so the writing may be easily read
- c. Arrangement clear to user
- d. Neat notes of greater benefit to student than carelessly written ones
- e. Important divisions of topics stressed by
  - 1) Use of different pages or cards for each
  - 2) Underlining of key words
- f. Notes as brief as possible  
DO NOT COPY word for word from a reference book unless quoting!

## 3. Points to remember in research:

- a. Note should ALWAYS be made of
  - 1) Title of book, part of book, article
  - 2) Author, editor, compiler
  - 3) Publisher
  - 4) Place of publication
  - 5) Latest copyright
  - 6) Volume
  - 7) Pages read
- b. Credit should ALWAYS be given to author for quotations or ideas copied
  - 1) If exact words are used, quotation marks and a footnote used
  - 2) If idea is copied, a footnote used
  - 3) Example of a footnote:
    - 1/ Broening, A.M., and others. How to Use the Library. p.10.
    - (The "1" indicates that this is the first reference on this particular page.)

## B. Good outlines

## 1. Purpose

- a. Invaluable aid for organization of information
- b. Aid to unified, clear, and properly emphasized results whether oral or written

## 2. Kinds of outlines

- a. Sentence outlines
- b. Topic outlines

## 3. Form of outline (Shortened form)

## I. \_\_\_\_\_

A. \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

B. \_\_\_\_\_

II. \_\_\_\_\_



(38)

4. Rules for outlining (Chapman, p. 167)
  - a. Do not make a single subdivision. If a topic is to be divided, it must have two parts at least.
  - b. Be sure that items of similar importance are in a parallel position with the same type of letter or number.
  - c. Always give an outline a title.
  - d. See that an outline contains real information.



THE  
LIBRARY OF THE  
MUSEUM OF NATURAL HISTORY  
AND  
ZOOLOGY  
OF THE  
CITY OF BOSTON  
1880

# APPENDIX



105

010-099 GENERAL WORKS

- 010 Bibliography -- Lists of books
- 020 Libraries
- 030 General encyclopedias
- 040 General collected essays
- 050 General magazines
- 060 General societies. Museums
- 070 Journalism. Newspapers
- 080 Polygraphy. Special libraries
- 090 Book rarities

100-199 PHILOSOPHY

- 100-109 General works on philosophy
- 110 Metaphysical
- 120 Special metaphysical topics
- 130 Relations of mind and body
- 140 Philosophic systems
- 150 Psychology. Mind and its activities
- 160 Logic
- 170 Ethics. Conduct
- 180 Ancient philosophers
- 190 Modern philosophers

200-299 RELIGION

- 200-209 General works on religion
- 210 Natural theology
- 220 The Bible
- 230 Christian theology
- 240 Devotional books
- 250 Work of ministers and priests
- 260 The church and its work
  - 266 Missions
- 270 General history of Christianity
- 280 The various Christian churches
- 290 Non-Christian religions
  - 292 Greek and Roman mythology
  - 296 Judaism

300-399 SOCIAL SCIENCES

- 300-309 General works on social science
- 310 Statistics
- 320 Political science. (See also 350)
- 330 Economics
  - 331 Labor and capital
- 340 Law
- 350 Administration of government
  - 352 Local government
  - 353 U.S. and state government
- 360 Social welfare. Societies
  - 361 Charity. Philanthropy
  - 364-365 Crime. Prisons
- 370 Education
- 380 Commerce. Communication





390 Customs. Folklore  
395 Etiquette  
398 Legends

406

400-499 LANGUAGE AND LANGUAGES

400-409 General works on language  
410 Comparison of languages  
420 English language  
423 English dictionaries  
430 German language  
440 French language  
450 Italian language  
460 Spanish language  
470 Latin language  
480 Greek language  
490 Other languages

500-599 SCIENCE, INCLUDING MATHEMATICS

500-599 General works on science  
510 Mathematics  
520 Astronomy  
530 Physics  
537 Electricity. (See also 621.3)  
540 Chemistry. (See also 660)  
550 Geology  
560 Paleontology. Early forms of life  
570 Biology  
575 Evolution  
580 Botany  
590 Zoology  
595 Insects  
598 Birds

600-699 APPLIED SCIENCE. INDUSTRIES

600-609 General works  
603 Inventions  
610 Medicine. Sanitation  
613 Hygiene  
620 Engineering  
621.3 Electrical engineering. (See also 537)  
630 Agriculture  
640 Home economics  
650 Business  
660 Chemical technology. (See also 540)  
670 Manufactures  
680 Mechanical trades. Handicraft  
690 Building

700-799 FINE ARTS. RECREATION

700-799 General works on art  
710 Landscape gardening  
720 Architecture  
730 Sculpture  
740 Drawing  
750 Painting  
760 Engraving  
770 Photography  
780 Music



- 790 Recreation. Amusements
- 792 Theatre. Play production
- 796 Outdoor games. Sports

800-899 LITERATURE

- 800-809 General works
- 810 American literature
  - 811 American poetry
  - 812 American drama
  - 814 American essays
- 820 English literature
  - 821 English poetry
  - 822 English drama
  - 824 English essays
- 830 German literature
- 840 French literature
- 850 Italian literature
- 860 Spanish literature
- 870 Latin literature
- 880 Greek literature
- 890 Other literatures

900-999 HISTORY. TRAVEL. BIOGRAPHY

- 900-909 General works on history
- 910 Travel and description. Geography
  - 911-912 Atlases and maps
  - 913 Archeology. Life in ancient times
  - 914 Europe. Description
    - 914.2 England. Description
  - 915 Asia. Description
- 920 Biography, Collective. (Lives of several persons in one book)
  - 92 Biography, Individual. (Some libraries use B or 921.)
- 930 Ancient history. (See also 913 Archeology.)
- 940 Europe. History (Since 476 A.D.)
  - 941 Scotland. Ireland
  - 942 England
  - 943 Germany
  - 944 France
  - 945 Italy
  - 946 Spain
  - 947 Russia
  - 948 Scandinavia
  - 949 Some of the smaller European countries
- 950 Asia. History
- 960 Africa. History
- 970 North America. History
  - 970.1 North American Indians
  - 971 Canada
  - 972 Mexico. Central America. West Indies
  - 973 United States
    - 973.1 Exploration
    - 973.2 Colonial period
    - 973.3-973.9 Later periods
  - 974-979 History of sections of the U.S.
- 980 South America. History
- 990 Oceanica. Polar regions

6

6

THE UNIVERSITY OF CHICAGO  
LIBRARY  
1100 EAST 58TH STREET  
CHICAGO, ILL. 60637  
TEL. 733-4331



100 - 199 PHILOSOPHY

In the beginning people began to think about themselves and to wonder why they were put on earth. They tried to reason also who was responsible for their being here. Experience had taught them that if they were not good, they would perhaps be punished. These ideas are incorporated in the 100's.

200 - 299 RELIGION

Having assured themselves that their presence on earth was due to a Supreme Being, it was only natural that they should worship Him. Thus we have the 200 group which includes the religions of all peoples.

300 - 399 SOCIAL SCIENCES

It was not long before the people on earth began to realize that they must live together and that laws were necessary for peace and harmony. They sought education, government, and the conservation of natural and human resources. The 300's cover all these things.

400 - 499 LANGUAGES

The necessity for organization accentuated the need for communication; and communication is dependent upon language which is the 400 group.

500 - 599 SCIENCE

Man was not alone in the world. There were animals, flowers, rocks; there were constellations and stars, and many other things which attracted his attention and required his consideration. These things constitute the 500's.

600 - 699 USEFUL ARTS

All the elements available to man needed to be put to use. Inventions and machinery were employed for improved health, farming, home and manufacturing. This applied science is the basis for the 600 classification.

700 - 799 FINE ARTS

With the comforts of home life begun and with more time for leisure, the finer sensibilities of man expressed themselves in painting, sculpture, music and other fine arts, which are grouped in the 700's.

800 - 899 LITERATURE

Literature naturally followed man's expression through the fine arts, and he began to express himself in writing about various things. He made poems of his feelings; he wrote stories. So the 800's stand for this development.



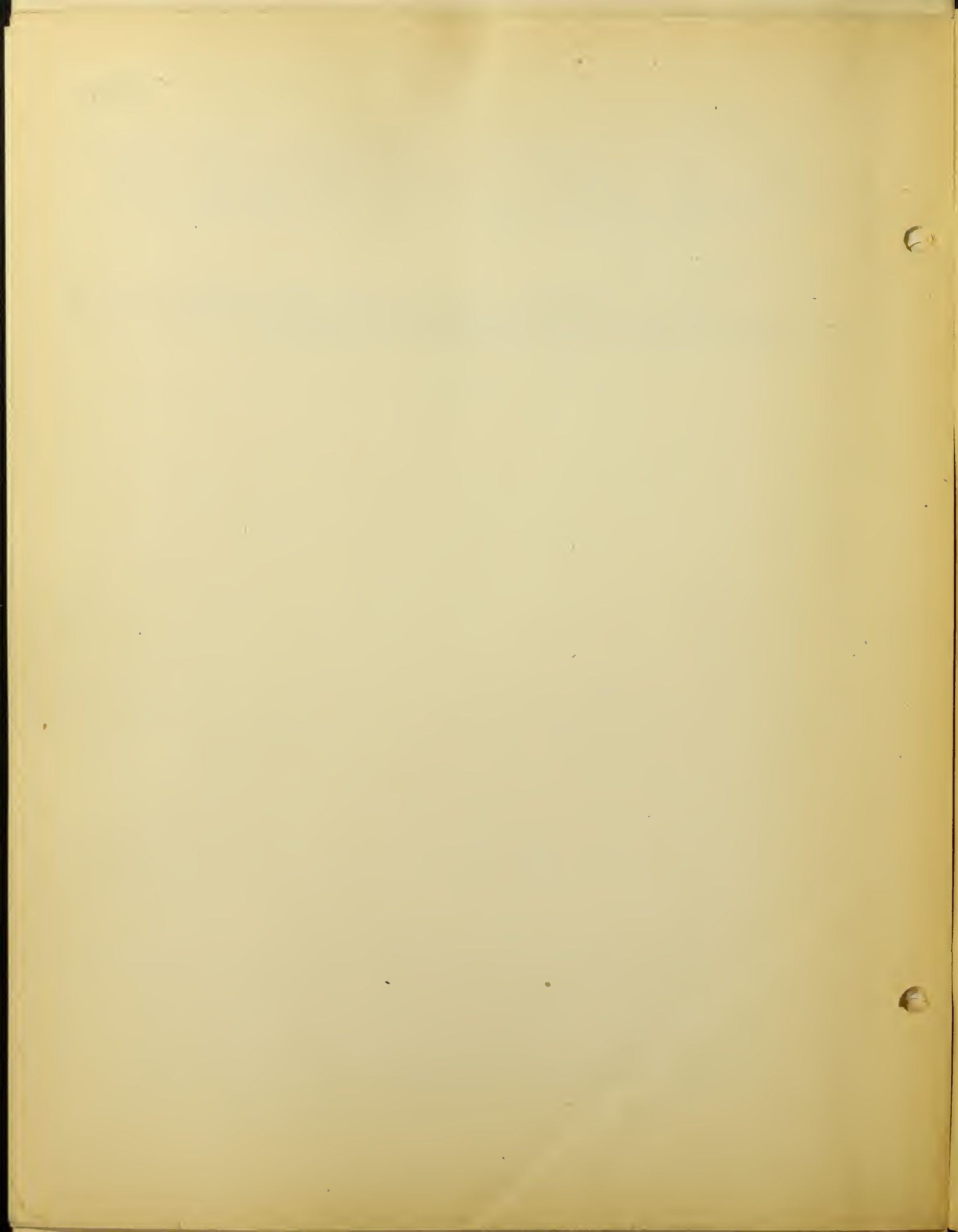


## 900 - 999 HISTORY

Because of their achievements the people were able to visit from land to land and to tell of the life and history of their own lands. They were proud of their advancement and they wanted their children to know of their struggles, and their progress. The story of mankind became history and is classified in the 900's.

## 000 - 099 GENERAL WORKS

With a wealth of accumulated knowledge in all the foregoing fields at hand, it seemed wise to put it together for the use of all people. These encyclopedias or general works are numbered in the 000's.



# Shelves at the Front of the Room

a	c		f	j
			g	
		d		k
		e	h	l
			i	m
b				n
				o

# Shelves at the Back of the Room

p	t		w	x
q		v		
r	u			
s				

Locate the following sources of information in the school library by writing the letters in the blanks to the left which correspond to the correct locations on the shelves.

1. Encyclopaedia Britannica
2. The World Almanac
3. The Card Catalog
4. A Dictionary of American Biography
5. U.S. History Books
6. Individual Biographies

7. Roget's Thesaurus
8. Science Books
9. Travel Books
10. Who's Who in America
11. The World Book Encyclopedia
12. Current Magazines

DATE

CLASS

110

NBHM





Name \_\_\_\_\_ Grade \_\_\_\_\_ Date \_\_\_\_\_

GUIDE WORDS direct you quickly to a volume or to a page in a volume. In each of the following questions there is ONE word that does NOT follow the guide words included for that question. Find the wrong reference and write the corresponding letter in the blank to the right.

For example:

Which reference does not belong with the guide words?

TRANSPLANT - TRAVELER

- |               |              |
|---------------|--------------|
| a. transverse | c. travel    |
| b. transpire  | d. transport |

b

1. DISPREAD - DISSERT

- |              |               |
|--------------|---------------|
| a. dispute   | c. disrespect |
| b. dispraise | d. dissent    |

1. \_\_\_\_\_

2. LOADSTAR - LOCKSMITH

- |            |             |
|------------|-------------|
| a. loading | c. lockout  |
| b. lobelia | d. location |

2. \_\_\_\_\_

3. CREMO - CRESTFALLEN

- |               |              |
|---------------|--------------|
| a. cretaceous | c. cresol    |
| b. creole     | d. crescendo |

3. \_\_\_\_\_

4. ABBE - BARRYMORE

- |            |           |
|------------|-----------|
| a. Barstow | c. Barnes |
| b. Agassiz | d. Adams  |

4. \_\_\_\_\_

5. BARSOTTI - BRAZER

- |            |               |
|------------|---------------|
| a. Bowdoin | c. Bradstreet |
| b. Barry   | d. Bloomer    |

5. \_\_\_\_\_

6. VERBALISM - VERNACULAR

- |            |              |
|------------|--------------|
| a. verify  | c. verbal    |
| b. verdant | d. vermilion |

6. \_\_\_\_\_

7. WOOLGROWER - WORLD

- |             |                  |
|-------------|------------------|
| a. workshop | c. world         |
| b. wordy    | d. woolgathering |

7. \_\_\_\_\_

8. BOYCOTT - BRAIN

- |           |          |
|-----------|----------|
| a. brail  | c. brake |
| b. boyish | d. braid |

8. \_\_\_\_\_

9. BREARLY - CHANDLER

- |                 |            |
|-----------------|------------|
| a. Breaux       | c. Chance  |
| b. Breckinridge | d. Braxton |

9. \_\_\_\_\_

10. WARDEN - EDMSER

- |          |              |
|----------|--------------|
| a. Vale  | c. Wentworth |
| b. Trail | d. Weymouth  |

10. \_\_\_\_\_

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*[The following text is extremely faint and illegible due to the quality of the scan. It appears to be a list or a series of entries, possibly names and dates, arranged in columns.]*

11. PARTY - MODERNIST  
a. McArthur  
b. Roach

c. Robbins  
d. Quinn

11. \_\_\_\_\_

12. MODERNIST - MOLD  
a. modernize  
b. moist

c. modify  
d. modernism

12. \_\_\_\_\_

13. SQUARE - SQUIRE  
a. squire  
b. square-rigged

c. squarish  
d. square

13. \_\_\_\_\_

14. TIGHT - TIME  
a. timber  
b. tilt

c. tiger lily  
d. timbre

14. \_\_\_\_\_

15. OGLETHORPE - PLATTER  
a. Ott  
b. Oglesby

c. Onderdonk  
d. O'Gorman

15. \_\_\_\_\_









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